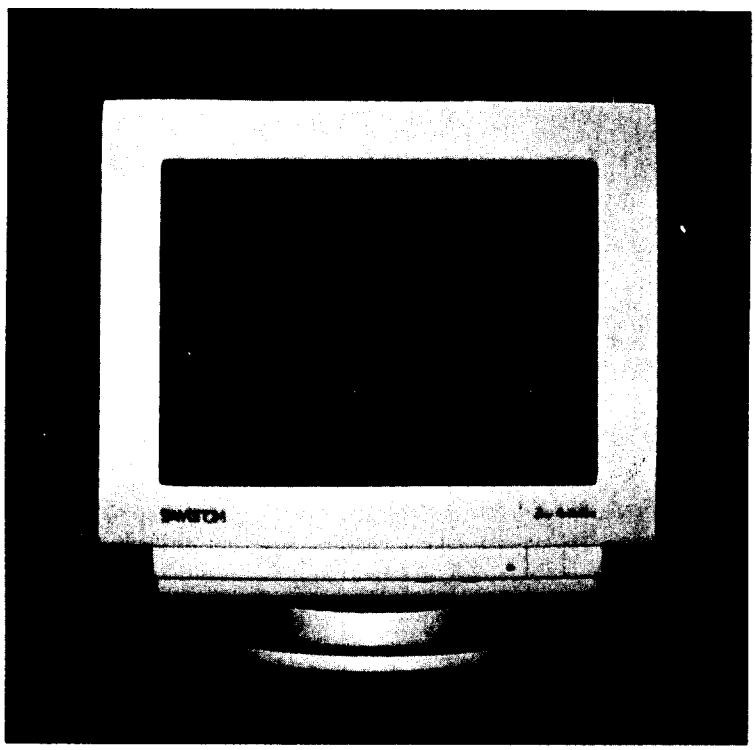
SAMTRON

14″ SUPER VGA COLOR MONITOR

SERVICE MANUAL

SC-4 * *VS/L+(ET)

LATEST BOARD VERSION



CAPACITOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
C100	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C101	1336393342	CAP, METALZ-PP	0.33UF, +/−10%, 250VAC, −25'C/+85'C, RT		
C102	1336392226	CAP, METALZ-PP	2200PF, +/−10%, 250VAC, −25'C/+85'C, RT		
C103	1336392226	CAP, METALZ-PP	2200PF, +/−10%, 250VAC, −25'C/+85'C, RT		
C105	1133102277	CAP, AL-ELECT, STICK	220UF, 20%, 400V, −40/85'C, PT		
C106	1336504734	CAP, METALZ-PP	0.047UF, 800V, 5%, RT		
C107	1233501033	CAP, DISC, CERMIC, CK	0.01UF, −20/80%, 500V, −25/85'C, RT		
C108	111950336B	CAP, AL-ELECT, GP	33UF, 20%, 50V, −40/85'C, RT, SMALL		
C109	111950475B	CAP, AL-ELECT, GP	4.7UF, 20%, 50V, −40/85'C, RT, SMALL		
C110	1230704722	CAP, DISC CERAMIC, CK	4700PF, 20%, 400VAC, −25/85'C, RT		
C111	1230704722	CAP, DISC CERAMIC, CK	4700PF, 20%, 400VAC, −25/85'C, RT		
C112	1233402716	CAP, DISC CERAMIC, CK-45	270PF, 10%, 500V, −25/85'C, RT		
C113	1119601072	CAP, AL-ELECT, GP	100UF, 100V, 20%, −40/85'C, RT		
C114	1233501033	CAP, DISC, CERAMIC, CK	0.01UF, −20/80%, 500V, −25/85'C, RT		
C115	1119701069	CAP, AL-ELECT, GP	10UF, 20%, 160V, −40/85'C, RT		
C116	1119701072	CAP, AL-ELECT, GP	100UF, 20%, 160V, −40/85'C, RT		
C117	1233402716	CAP, DISC CERAMIC, CK-45	270PF, 10%, 500V, −25/85'C, RT		
C118	1119701072	CAP, AL-ELECT, GP	100UF, 20%, 160V, −40/85'C, RT		
C119	111940476B	CAP, AL-ELECT, GP	47UF, 20%, 35V, −40/85'C, RT, SMALL		
C120	111940476B	CAP, AL-ELECT, GP	47UF, 20%, 35V, −40/85'C, RT, SMALL		
C121	111950107B	CAP, AL-ELECT, GP	100UF, 20%, 50V, −40/85'C, RT, SMALL		
C122	1233402716	CAP, DISC CERAMIC, CK-45	270PF, 10%, 500V, −25/85'C, RT		
C123	111950107B	CAP, AL-ELECT, GP	100UF, 20%, 50V, −40/85'C, RT, SMALL		
C124	1119301084	CAP, AL-ELECT, GP	1000UF, 25V, 20%, −40/85'C, RT		
C125	1119202277	CAP, AL-ELECT, GP	220UF, 20%, 16V, −40/85'C, RT		
C126	1237101045	CAP, DICS CERAMIC. CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C128	1119202277	CAP, AL-ELECT, GP	220UF, 20%, 16V, −40/85'C, RT		
C129	1119304773	CAP, AL-ELECT, GP	470UF, 20%, 25V, −40/85'C, RT		
C130	1119202277	CAP, AL-ELECT, GP	220UF, 20%, 16V, −40/85'C, RT		
C131	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C133	111920107B	CAP, AL-ELECT, GP	100UF, 20%, 16V, −40/85'C, RT, SMALL		
C201	111950107B	CAP, AL-ELECT, GP	100UF, 20%, 50V, −40/85'C, RT, SMALL		
C202	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C203	1312604734	CAP, IND-POLYESTER	0.047UF, 10%, 100V, −, RT		
C204	1218204707	CAP, DISC CERAMIC, CC	47PF, 5%, 50V, −25/85'C, RT		
C205	1119304773	CAP, AL-ELECT, GP	470UF, 20%, 25V, −40/85'C, RT		

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C206	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C207	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C301	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C302	1119201084	CAP, AL-ELECT, GP	1000UF, 16V, 20%, −40/85'C, RT		
C303	131620224B	CAP, METALZ-POLYESTER	0.22UF, 100V, 10%, RT		
C304	1312602238	CAP, IND-POLYESTER	0.022UF, 10%, 100V, −, RT		
C305	1312601021	CAP, IND-POLYESTER	0.001UF, 10%, 100V, RT		
C306	1312201045	CAP, IND-POLYESTER	0.1UF, 5%, 100V, RT		
C307	1333703327	CAP, PP	0.0033UF, 2%, 100V, RB		
C308	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C309	1312601033	CAP, IND-POLYESTER	0.01UF, 10%, 100V, RT, CQ92MT		
C310	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C311	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C312	111940476B	CAP, AL-ELECT, GP	47UF, 20%, 35V, −40/85'C, RT, SMALL		
C313	1312601523	CAP, IND-POLYESTER	0.0015UF, 10%, 100V, RT, CQ92MT		
C314	1119401072	CAP, AL-ELECT, GP	100UF, 20%, 35V, −40/85'C, RT		
C315	1312604722	CAP, IND-POLYESTER	0.0047UF, 10%, 100V, RT		
C316	1331706024	CAP, PP, HIGH-VOL	6000PF, 1.6KV, 5%, −25/85'C, RB		
C316	1331706829	CAP, PP, HIGH-VOL	6800 PF, 5%, 1.6KV, RB		
C317	1331701229	CAP, PP, HIGH-VOL	1200PF, 5%, 1.6KV, RB		
C318	1337402238	CAP, PP	0.022UF, 800V, 5%, RT		
C319	1312602238	CAP, IND-POLYESTER	0.022UF, 10%, 100V, −, RT		
C320	1312602238	CAP, IND-POLYESTER	0.022UF, 10%, 100V, −, RT		
C321	1233301021	CAP, DISC CERAMIC, CK	1000PF, 10%, 1KV, −25/85'C, RT		
C322	1119701069	CAP, AL-ELECT, GP	10UF, 20%, 160V, −40/85'C, RT		
C323	1336208241	CAP, METALZ-PP	0.82UF, 200V, 5%, RT		
C325	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, −40/85'C, RT, SMALL		
C326	1312601033	CAP, IND-POLYESTER	0.01UF, 10%, 100V, RT, CQ92MT		
C328	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C401	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, −40/85'C, RT, SMALL		
C402	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, −40/85'C, RT, SMALL		
C403	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, −40/85'C, RT, SMALL		
C404	111920107B	CAP, AL-ELECT, GP	100UF, 20%, 16V, −40/85'C, RT, SMALL		
C405	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C406	111950475B	CAP, AL-ELECT, GP	4.7UF, 20%, 50V, −40/85'C, RT, SMALL		
C407	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		

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C408	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C409	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C410	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C411	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C412	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C413	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C414	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C415	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C416	1119202277	CAP, AL-ELECT, GP	220UF, 20%, 16V, −40/85'C, RT		
C417	1218208202	CAP, DISC CERAMIC, CC	82PF, 50VDC, 5%, −25/85'C, RT		
C418	1218208202	CAP, DISC CERAMIC, CC	82PF, 50VDC, 5%, −25/85'C, RT		
C419	1218208202	CAP, DISC CERAMIC, CC	82PF, 50VDC, 5%, −25/85'C, RT		
C420	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C500	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C502R, G, B	111920476B	CAP, AL-ELECT, GP	47UF, 20%, 16V, −40/85'C, RT, SMALL		
C503RB	1218203303	CAP, DISC CERAMIC, CC45	33PF, 5%, 50V, −25/85'C, RT, TC		
C504R, G, B	1233104719	CAP, DISC CERAMIC, CK	470PF, 10%, 50V, −25/85'C, RT		
C505R, G, B	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C506	111960106B	CAP, AL-ELECT, GP	10UF, 20%, 100V, −40/85'C, RT, SMALL		
C508	1233401018	CAP, DISC CERAMIC, CK45	100PF, 10%, 500V, −25/85'C, RT, HDC		
C509	1233202728	CAP, DISC CERAMIC, CK	2700PF, 10%, 2KV, −25/85'C, RT		
C510R, G, B	1219301006	CAP, DISC CERAMIC, CC	10PF, 5%, 500V, −25/85'C, RT		
C520	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C601	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, −40/85'C, RT, SMALL		
C602	1312601033	CAP, IND-POLYESTER	0.01UF, 10%, 100V, RT, CQ92MT		
C603	1218202716	CAP, DISC CERAMIC, CC	270PF, 5%, 50V, −25/85'C, RT		
C604	1312601021	CAP, IND-POLYESTER	0.001UF, 10%, 100V, RT		
C605	1333702226	CAP, IND-PP	0.0022UF, 2%, 100V, RB		
C606	1337101021	CAP, PP	1000PF, 100V, 5%, RT		
C607	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C608	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C609	1119201084	CAP, AL-ELECT, GP	1000UF, 16V, 20%, −40/85'C, RT		
C610	111920106B	CAP, AL-ELECT, GP	10UF, 20%, 16V, −40/85'C, RT, SMALL		
C612	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C613	1237101045	CAP, DISC CERAMIC, CK-45	0.1UF, −20/80%, 50V, −25/85'C, RT		
C614	1312201045	CAP, IND-POLYESTER	0.1UF, 5%, 100V, RT		

CAPACITOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
C615	1312201826	CAP, IND-POLYESTER	1800PF, 5%, 100V, RT		
C616	1312601021	CAP, IND-POLYESTER	0.001UF, 10%, 100V, RT		
C801	1312602226	CAP, IND-POLYESTER	0.0022UF, 10%, 100V, RT, CQ92MT		
C802	1158203951	CAP, BP-ELECT, CROSS	3.9UF, 20%, 25V, −40/85'C, RB		
C803	131620104B	CAP, METALZ-POLYESTER	0.1UF, 100V, 10%, RT		
C804	1312604734	CAP, IND-POLYESTER	0.047UF, 10%, 100V, −, RT		
C805	1233402716	CAP, DISC CERAMIC, CK-45	270PF, 10%, 500V, −25/85'C, RT		
C806	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C807	131620334B	CAP, METALZ-POLYESTER	0.33UF, 100V, 10%, RT		
C808	1119801069	CAP, AL-ELECT, GP	10UF, 20%, 250V, −40/85'C, RT		
C810	111950336B	CAP, AL-ELECT, GP	33UF, 20%, 50V, −40/85'C, RT, SMALL		
C811	1318501045	CAP, METALZ-POLYESTER	0.1UF, 250V, 5%, −40'C/+85'C, RB		
C812	1312602238	CAP, IND-POLYESTER	0.022UF, 10%, 100V, −, RT		
C813	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
C814	111950105B	CAP, AL-ELECT, GP	1UF, 20%, 50V, −40/85'C, RT, SMALL		
C827	1312601045	CAP, IND-POLYESTER	0.1UF, 10%, 100V, RT, CQ92MT		
SG501	139110002B	CAP, SPARK-GAP	1KV, S-23		

FIXED RESISTOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	1412102214	RES, CABON, AT	220 OHM, 1/6W, 5%		
	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R100	143360221B	RES, METAL OXIDE, AT	220 OHM, 1W, 5% 63MM TAPING		
R101	1414201057	RES, CARBON, AT	1M OHM, 1/2W, 5%		
R102	1414202743	RES, CARBON, AT	270K OHM, 1/2W, 5%		
R103	1414202743	RES, CARBON, AT	270K OHM, 1/2W, 5%		
R104	1434606832	RES, METAL OXIDE, AT	68K OHM, 2W, 5%, 63MM TAPING		
R105	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R106	146460R336	RES, WIRE WOUND, AT	0.33 OHM, 1W, 5%, 63MM TAPING		
R107	1413403303	RES, CARBON, AT	33 OHM, 1/4W, 5%		
R108	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R109	1435506805	RES, METAL OXIDE, AT	68 OHM, 3W, 5%, 63MM		
R110	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R111	1413403303	RES, CARBON, AT	33 OHM, 1/4W, 5%		
R112	1413401511	RES, CARBON, AT	150 OHM, 1/4W, 5%		
R113	1413401547	RES, CARBON, AT	150K OHM, 1/4W, 5%		
R114	1413401547	RES, CARBON, AT	150K OHM, 1/4W, 5%		
R115	1413402238	RES, CARBON, AT	22K OHM, 1/4W, 5%		

FIXED RESISTOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
R116	1413405636	RES, CARBON, AT	56K OHM, 1/4W, 5%		
R117	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R118	1413401229	RES, CARBON, AT	1.2K OHM, 1/4W, 5%		
R119	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R120	1413401229	RES, CARBON, AT	1.2K OHM, 1/4W, 5%		
R121	141420R508	RES, CARBON, AT	0.5 OHM, 1/2W, 5%		
R122	1413301826	RES, CARBON, AT	1.8K OHM, 1/4W, 2%		
R123	1413302214	RES, CARBON, AT	220 OHM, 1/4W, 2%		
R124	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R125	1413408214	RES, CARBON, AT	820 OHM, 1/4W, 5%		
R126	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R201	1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%		
R202	1412103024	RES, CARBON, AT	3K OHM, 1/6W, 5%		
R202	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R203	1414201511	RES, CARBON, AT	150 OHM, 1/2W, 5%		
R204	1414201R01	RES, CARBON, AT	1 OHM, 1/2W, 5%		
R205	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R207	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R208	141420R508	RES, CARBON, AT	0.5 OHM, 1/2W, 5%		
R210	1412105636	RES, CARBON, AT	56K OHM, 1/6W, 5%		
R211	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R300	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R301	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R304	1412101244	RES, CARBON, AT	120K OHM, 1/6W, 5%		
R305	1412104746	RES, CARBON, AT	470K OHM, 1/6W, 5%		
R306	1412102241	RES, CARBON, AT	220K OHM, 1/6W, 5%		
R307	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R308	1412102241	RES, CARBON, AT	220K OHM, 1/6W, 5%		
R309	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R310	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R311	1412102238	RES, CARBON, AT	22K OHM, 1/6W, 5%		
R312	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R313	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R314	1412106844	RES, CARBON, AT	680K OHM, 1/6W, 5%		
R315	1412104746	RES, CARBON, AT	470K OHM, 1/6W, 5%		
R316	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		

FIXED RESISTOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
R317	1412103339	RES, CARBON, AT	33K OHM, 1/6W, 5%		
R318	1412105636	RES, CARBON, AT	56K OHM, 1/6W, 5%		
R319	1412102241	RES, CARBON, AT	220K OHM, 1/6W, 5%		
R320	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R322	1412104746	RES, CARBON, AT	470K OHM, 1/6W, 5%		
R323	1413402226	RES, CARBON, AT	2.2K OHM, 1/4W, 5%		
R324	1413402238	RES, CARBON, AT	2.2 OHM, 1/2W, 5%		
R325	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R326	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R327	1412101841	RES, CARBON, AT	180K OHM, 1/6W, 5%		
R328	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R329	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R330	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R331	1412104746	RES, CARBON, AT	470K OHM, 1/6W, 5%		
R332	1412105624	RES, CARBON, AT	5.6K OHM, 1/6W, 5%		
R333	1435506805	RES, METAL OXIDE, AT	68 OHM, 3W, 5%, 63MM		
R334	1413404719	RES, CARBON, AT	470 OHM, 1/4W, 5%		
R335	1414202R22	RES, CARBON, AT	2.2K OHM, 1/2W, 5%		
R336	1413404707	RES, CARBON, AT	47 OHM, 1/4W, 5%		
R337	1461501R01	RES, WIRE WOUND, AT	1 OHM, 2W, 5%, 63MM TAPING		
R338	143360271B	RES, METAL OXIDE, AT	270 OHM, 1W, 5%, 63MM TAPING		
R339	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R340	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R341	1413405636	RES, CARBON, AT	56K OHM, 1/4W, 5%		
R342	1412106829	RES, CARBON, AT	6.8K OHM, 1/6W, 5%		
R343	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R344	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R345	1412101033	RES, CARBON, AT	10K, OHM, 1/6W, 5%		
R346	1412101033	RES, CARBON, AT	10K, OHM, 1/6W, 5%		
R347	1412101033	RES, CARBON, AT	10K, OHM, 1/6W, 5%		
R348	1412102238	RES, CARBON, AT	22K OHM, 1/6W, 5%		
R349	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R401	1412107508	RES, CARBON, AT	75 OHM, 1/6W, 5%		
R402	1412107508	RES, CARBON, AT	75 OHM, 1/6W, 5%		
R403	1412107508	RES, CARBON, AT	75 OHM, 1/6W, 5%		
R404	1412105624	RES, CARBON, AT	5.6K OHM, 1/6W, 5%		

FIXED RESISTOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
R405	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R406	1412105624	RES, CARBON, AT	5.6K OHM, 1/6W, 5%		
R407	1413401838	RES, CARBON, AT	18K OHM, 1/4W, 5%		
R408	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R409	1412105107	RES, CARBON, AT	51 OHM, 1/6W, 5%		
R410	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R411	1412103912	RES, CARBON, AT	390 OHM, 1/6W, 5%		
R412	1412105107	RES, CARBON, AT	51 OHM, 1/6W, 5%		
R413	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R414	1412103912	RES, CARBON, AT	390 OHM, 1/6W, 5%		
R415	1412105107	RES, CARBON, AT	51 OHM, 1/6W, 5%		
R416	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R417	1412103912	RES, CARBON, AT	390 OHM, 1/6W, 5%		
R418	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R428ST	1412102743	RES, CARBON, AT	270K OHM, 1/6W, 5%		
R439L	1412102743	RES, CARBON, AT	270K OHM, 1/6W, 5%		
R502R, G, B	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R503R, G, B	1413401511	RES, CARBON, AT	150 OHM, 1/4W, 5%		
R504R, G, B	1435501523	RES, METAL OXIDE, AT	1.5K OHM, 3W, 5%, 63MM		
R505R, G, B	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R506R, G, B	1451601018	RES, METAL, FUSIBLE, AT	100 OHM, 1/4W, 5%		
R507R, G, B	1451601018	RES, METAL, FUSIBLE, AT	100 OHM, 1/4W, 5%		
R508R, G, B	1413402731	RES, CARBON, AT	27K OHM, 1/4W, 5%		
R509R, G, B	1414201018	RES, CARBON, AT	100 OHM, 1/2W, 5%		
R510R, G, B	1412105636	RES, CARBON, AT	56K OHM, 1/6W, 5%		
R600	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R602	1412102214	RES, CARBON, AT	220 OHM, 1/6W, 5%		
R603	1412102241	RES, CARBON, AT	220K OHM, 1/6W, 5%		
R604	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R606	1412201033	RES, CARBON, AT	10K OHM, 1/6W, 2%		
R607	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R608	1412101232	RES, CARBON, AT	12K OHM, 1/6W, 5%		
R609	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R610	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R611	1412201045	RES, CARBON, AT	100K OHM, 1/6W, 2%		
R612	1412106844	RES, CARBON, AT	680K OHM, 1/6W, 5%		

FIXED RESISTOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
R613	1412201045	RES, CARBON, AT	100K OHM, 1/6W, 2%		
R614	1412201045	RES, CARBON, AT	100K OHM, 1/6W, 2%		
R615	1412201547	RES, CARBON, AT	150K OHM, 1/6W, 2%		
R616	1412102238	RES, CARBON, AT	22K OHM, 1/6W, 5%		
R617	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R618	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R619	1412101838	RES, CARBON, AT	18K OHM, 1/6W, 5%		
R620	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R621	1414202R22	RES, CARBON, AT	2.2 OHM, 1/2, 5%		
R622	1412107508	RES, CARBON, AT	75 OHM, 1/6W, 5%		
R623	1412101838	RES, CARBON, AT	18K OHM, 1/6W, 5%		
R624	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R625	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R626	1413401523	RES, CARBON, AT	1.5K OHM, 1/4W, 5%		
R627	1412102238	RES, CARBON, AT	22K OHM, 1/6W, 5%		
R628	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R629	1412103936	RES, CARBON, AT	39K OHM, 1/6W, 5%		
R630	1412102743	RES, CARBON, AT	270K OHM, 1/6W, 5%		
R631	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R632	1412102238	RES, CARBON, AT	22K OHM, 1/6W, 5%		
R634	1413404707	RES, CARBON, AT	47 OHM, 1/4W, 5%		
R635	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R636	1412102238	RES, CARBON, AT	22K OHM, 1/6W, 5%		
R637	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R637	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R640	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R800	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R801	1412101547	RES, CARBON, AT	150K OHM, 1/6W, 5%		
R801R, G, B	1413404719	RES, CARBON, AT	470 OHM, 1/4W, 5%		
R802	1413401523	RES, CARBON, AT	1.5K OHM, 1/4W, 5%		
R803	1412103339	RES, CARBON, AT	33K OHM, 1/6W, 5%		
R804	1412101045	RES, CARBON, AT	100K OHM, 1/6W, 5%		
R805	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R806	1412103339	RES, CARBON, AT	33K OHM, 1/6W, 5%		
R807	1413405636	RES, CARBON, AT	56K OHM, 1/4W, 5%		
R808	1414202R22	RES, CARBON, AT	2.2 OHM, 1/2, 5%		

FIXED RESISTOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
R809	1414201547	RES, CARBON, AT	150K OHM, 1/2W, 5%		
R810	1413402743	RES, CARBON, AT	270K OHM, 1/4W, 5%		
R811	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R812	1413401523	RES, CARBON, AT	1.5K OHM, 1/4W, 5%		
R813	1412103936	RES, CARBON, AT	39K OHM, 1/6W, 5%		
R814	1413401523	RES, CARBON, AT	1.5K OHM, 1/4W, 5%		
R815	1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%		
R816	1412102226	RES, CARBON, AT	2.2K OHM, 1/6W, 5%		
R817	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R818	1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%		
R820	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R821	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R822	1412102728	RES, CARBON, AT	2.7K OHM, 1/6W, 5%		
R823	1412101021	RES, CARBON, AT	1K OHM, 1/6W, 5%		
R824	1412104722	RES, CARBON, AT	4.7K OHM, 1/6W, 5%		
R825	1412101033	RES, CARBON, AT	10K OHM, 1/6W, 5%		
R826	1413403303	RES, CARBON, AT	33 OHM, 1/4W, 5%		
R827	1414203948	RES, CARBON, AT	390K OHM, 1/2W, 5%		
R828	1413401045	RES, CARBON, AT	100K OHM, 1/4W, 5%		
R829	1413401511	RES, CARBON, AT	150 OHM, 1/4W, 5%		
R832	1412102241	RES, CARBON, AT	220K OHM, 1/6W, 5%		
R833	1412102238	RES, CARBON, AT	22K OHM, 1/6W, 5%		
R834	1412103339	RES, CARBON, AT	33K OHM, 1/6W, 5%		
R835	1412108226	RES, CARBON, AT	8.2K OHM, 1/6W, 5%		
R836	1412102253	RES, CARBON, AT	2.2M OHM, 1/6W, 5%		
R837	1412101256	RES, CARBON, AT	1.2M OHM, 1/6W, 5%		

VARIABLE RESISTOR

CKT NOS.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
NTC101	1562290024	THERMISTOR, NTC	5 OHM, 3.4A, 2.4W		
PTC101	1562190063	THERMISTOR, PTC	14 OHM, 20%, 220V		
VR101	1527290036	VAR, NO-HANDLE, CAP, V-TYPE, RT	500 OHM, B, 0.1W		
VR201	1536100036	VAR, HANDLE, PCB-MOUNT, ARRAY, H-TYPE	100K/100K/100K/100K OHM, B, 0.05W, 25F		
VR301	1536100036	VAR, HANDLE, PCB-MOUNT, ARRAY, H-TYPE	100K/100K/100K/100K OHM, B, 0.05W, 25F		
VR302	1527190036	VAR, NO-HANDLE, CAP, H-TYPE, RT	100K OHM, B, 0.1W		
VR303	1527190099	VAR, NO-HANDLE, CAP, H-TYPE, RT	1K OHM, B, 0.1W		
VR304	1536100036	VAR, HANDLE, PCB-MOUNT, ARRAY, H-TYPE	100K/100K/100K/100K OHM, B, 0.05W, 25F		
VR305	1527190012	VAR, NO-HANDLE, CAP, H-TYPE, RT	10K OHM, B, 0.1W		
VR401	1527190063	VAR, NO-HANDLE, CAP, H-TYPE, RT	100 OHM, B, 0.1W		
VR402	1527190063	VAR, NO-HANDLE, CAP, H-TYPE, RT	100 OHM, B, 0.1W		
VR403	1527190063	VAR, NO-HANDLE, CAP, H-TYPE, RT	100 OHM, B, 0.1W		
VR404	1535300048	VAR, HANDLE, PCB-MOUNT, H-TYPE	10K OHM, B, 0.05W, +/−20%, 25F		
VR501R, G, B	1527190024	VAR, NO-HANDLE, CAP, H-TYPE, RT	50K OHM, B, 0.1W		
VR601	1527190128	VAR, HANDLE, PCB-MOUNT, H-TYPE	5K OHM, B, 0.1W		
VR801	1536100036	VAR, HANDLE, PCB-MOUNT, ARRAY, H-TYPE	100K/100K/100K/100K OHM, B, 0.05W, 25F		
VR802	1527190036	VAR, NO-HANDLE, CAP, H-TYPE, RT	100K OHM, B, 0.1W		
VR803	1535300051	VAR, HANDLE, PCB-MOUNT, H-TYPE	20K OHM, B, 0.05W, +/−20%, 25F		

PCB

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	1611101598	PCB, MAIN, SC-428VS+(E)T	330*245, FR-1, 1.6T, DS-1107A		

COIL AND TRANSFORMER

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	1731400063	FILTER, EMI SOCKET	250V/3A, 473PF(X1), 222PF, 1.2MH, SEV		
CN102	1722400208	COIL, DEGAUSSING	115+/−1TS, 0.45, 13.7OHM, 1040MM		
L102	1731300063	FIRTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L103	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L104	1722200298	COIL, CHOKE	50UH, 15%, ROBOT		
L105	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L106	1722200298	COIL, CHOKE	50UH, 15%, ROBOT		
L107	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L301	1722600315	COIL, H-LIN, FIX	12UH, 25%, TEFLON-WIRE		
L301	1722600339	COIL, H-LIN, FIX	10UH, 30%, TEFLON-WIRE, NS		
L302	1721100235	COIL, MODULATION	LITZ, 100UH, 7%, ROBOT		
L401	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L402	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L403	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L404	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L405	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L406	1731300063	FILTER, CORE	2.4UH, 5.5MM, BEAD, 0.032 OHM, CGA/VII, AT		
L501R, G, B	1722000024	COIL, PEAKING	5.6UH, +−10%, RT		
LF102	1731100315	FILTER, LINE	13MH, CROSS, SC-428TX		
T101	1711600473	TRANS, POWER SWITCHING	TOPAZ(N), 115/230V		
T301	1713200259	COIL, TRANS, H-DRIVE	10MH/70UH, ROBOT		
T302	1712290235	FBT COLOR	FTO-14A041		

OTHER ELECTRIC

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	1917300131	CORE, RING, FERRITE	9.9(4.7) *5.2, 9.9 PI		
F101	1910490012	FUSE TIME-LAG WITHOUT LEAD	3.15A, 250V, 5 *20MM, CERAMIC		
F101A	1911300087	FUSE CLIP	5.20 *20MM, TAPPING		
F101B	1911300087	FUSE CLIP	5.20 *20MM, TAPPING		
SW101	1913190155	PUSH SWITCH	SPST, 5A/80A, 250VAC, TV-5		
SW102	1913600116	SLIDE SWITCH	0.1A, 12V, 3 POLE, 2 POSI		

TRANASISTOR

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	2111500116	TR NPN TO-126	KSC3503D, 0.1A, 300V, 7W(TC), VD O/P, ML		
	2111500131	TR NPN TO-126	KSE800, 4A, 60V, 40W		
	2111790143	TR NPN TO-3P	D1878, 5A, 1500V, 60W(TC), VER DEF		
Q101	2111400036	TR NPN TO-92	KSC1008Y, 0.7A, 80V, 800MA, LF AMP		
Q102	2111400036	TR NPN TO-92	KSC1008Y, 0.7A, 80V, 800MA, LF AMP		
Q103	2111790116	TR NPN TO-220	MJE3055T, 10A, 70V, 75W(TC), PW SW		
Q104	2111790116	TR NPN TO-220	MJE3055T, 10A, 70V, 75W(TC), PW SW		
Q105	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q301	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q302	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q303	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q305	2111400116	TR NPN TO-92	KSC2331, 700MA, 80V, 1.0W, LF AMP		
Q307	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q308	2112400024	TR PNP TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		
Q309	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q502R, G, B	2111400063	TR NPN TO-92	2222A, 0.6, 75V, 625MW, GP, RT		
Q503R, G, B	2111400315	TR NPN TO-92	2N5551C-Y, 0.6A, 160V, 625MW		
Q504R, G, B	2112400182	TR PNP TO-92	2N5401C-Y, 0.6A, 150V, 625MW		
Q601	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q602	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q605	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q606	2112400024	TR PNP TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		
Q607	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q608	2112400024	TR PNP TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		
Q609	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q610	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q801	2112400024	TR PNP TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		
Q802	2112400024	TR PNP TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		
Q804	2111400036	TR NPN TO-92	KSC1008Y, 0.7A, 80V, 800MA, LF AMP		
Q805	2111400116	TR NPN TO-92	KSC2331, 700MA, 80V, 1.0W, LF AMP		
Q806	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q807	2111400012	TR NPN TO-92	KSC945CY, 150MA, 60V, 250MV, AF AMP/OSC		
Q808	2112400143	TR PNP TO-92	2N6520, 0.5A, 350V, 0.625W, HV, TAPING		
Q809	2112400024	TR PNP TO-92	KSA733CY, 0.15A, 60V, 0.25W, LF AMP		

DIODE

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
D101	2211390051	RECTIFIER DIODE BR	GBU4J, 4A, 600V, LEAD CUTTING		
D102	2211190012	RECTIFIER DIODE FR	1A, 1000V, MR818/GI818		
D103	2211100087	RECTIFIER DIODE FR	600V, 1A, IN4937		
D104	2211100087	RECTIFIER DIODE FR	600V, 1A, IN4937		
D105	2211100087	RECTIFIER DIODE FR	600V, 1A, IN4937		
D106	2211100087	RECTIFIER DIODE FR	600V, 1A, IN4937		
D107	2211190461	RECTIFIER DIODE FR	1.5A, 600V, 250NS, RGP15J		
D108	2211190461	RECTIFIER DIODE FR	1.5A, 600V, 250NS, RGP15J		
D109	2211190461	RECTIFIER DIODE FR	1.5A, 600V, 250NS, RGP15J		
D110	2211190461	RECTIFIER DIODE FR	1.5A, 600V, 250NS, RGP15J		
D111	2211190167	RECTIFIER DIODE FR	1.5A, 400V, RGP15G/FF1504		
D112	2211190458	RECTIFIER DIODE FR	3A, 400V, 50NS, UF5404		
D113	2212100051	ZENER DIODE	0.5W, 5.1V, UZ5.1B		
D114	2211190458	RECTIFIER DIODE FR	3A, 400V, 50NS, UF5404		
D115	2215290099	LED, GREEN	TLG223, 25MA, 70MW, TAPING		
D201	2213290048	SWITCHANG DIODE	1N4148, 150MA, 74V, AT		
D301	2213290048	SWITCHANG DIODE	1N4148, 150MA, 74V, AT		
D302	2213290048	SWITCHANG DIODE	1N4148, 150MA, 74V, AT		
D303	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D304	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D305	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D306	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D307	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D308	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D309	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D310	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D311	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D312	2211190526	SWITCHING DIODE FR	RU4DS, 2.5A, 1300V		
D313	2211190458	SWITCHING DIODE FR	3A, 400V, 50NS, UF5404		
D315	2212100366	ZENER DIODE	0.5W, 10V, MTZ 10C		
D316	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D317	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D401	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D402	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D403	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D404	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		

DIODE

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
D405	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D406	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D501R, G, B	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D502R, G, B	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D503R, G, B	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D504R, G, B	2212100366	ZENER DIODE	0.5W, 10V, MTZ 10C		
D505R, G, B	2211100087	RECTIFIER DIODE FR	600V, 1A, 1N4937		
D506R, G, B	2211100087	RECTIFIER DIODE FR	600V, 1A, 1N4937		
D507R, G, B	2212100167	ZENER DIODE	0.5W, 24V, UZ24B		
D601	2212100075	ZENER DIODE	0.5W, 6.2V, UZ6.2B		
D604	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D605	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D606	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D607	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D609	2212100051	ZENER DIODE	0.5W, 5.1V, UZ5.1B		
D801	2211100087	RECTIFIER DIODE FR	600V, 1A, 1N4937		
D803	2212100366	ZENER DIODE	0.5W, 10V, MTZ 10C		
D804	2211100087	RECTIFIER DIODE FR	600V, 1A, IN4937		
D805	2211100087	RECTIFIER DIODE FR	600V, 1A, 1N4937		
D806	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D807	2213290048	SWITCHING DIODE	1N4148, 150MA, 75V, AT		
D808	2212100366	ZENER DIODE	0.5W, 10V, MTZ 10C		
D809	2211100087	RECTIFIER DIODE FR	600V, 1A, 1N4937		
D810	2212100051	ZENER DIODE	0.5W, 5.1V, UZ5.1B		

IC

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	2331200116	IC, REGULATOR, TO-220	317, 1.5A		
	2332190339	IC, LINEAR, SIP-9	TDA8351, VERTICAL DEFLECTION		
	2332200104	IC, LINEAR, SIP-5	STR58041		
IC103	2331200048	IC, REGULATOR, TO-220	7812C, 1.5A, 12V		
IC301	2332190354	IC, LINEAR, DIP-20	TDA4850, HV DEFLECTION CONTROLLER		
IC401	2332190208	IC, LINEAR, DIP	1203, RGB VIDEO AMP, 28		
IC601	2312100868	IC, TTL, LS, DIP	74LS86		
IC602	2317195384	IC, 4000 SERIES, C-MOS, DIP-16	4538BP, DUAL MONO-MULTI VIBRATOR		
IC603	2317195384	IC, 4000 SERIES, C-MOS, DIP-16	4538BP, DUAL MONO-MULTI VIBRATOR		
IC604	2332100036	IC, LINEAR, DIP-14	KA324, QUAD OP AMP		

METAL

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	3111400167	HEAT SINK-N, TERMINAL	22*5.2*32, CU, ZPW		
	3111400618	HEAT SINK-N	30*15*23.5, A6063S		
	3111400621	HEAT SINK-N	23.5*15*15, A6063S		
	3112900473	SHIELD COVER, SOCKET, SC-428VS+	145*85*42.5, TIN 0.3T		
	3112900497	SHIELD COVER, VIDEO, SC-428VS+(L)	70*50.5*22.5, TIN 0.3T		
	3121102202	MET-I, PRS, BACK CHASSIS, SC-428DX/VS+	138*51.5*14, SECC-P 1T		
	3121102369	MET-I, PRS, PCB BRKT(R)	184*13.6*12, SECC-9-30/30 1T		
	3121102372	MET-I, PRS, PCB BRKT(L)	184*13.6*12, SECC-9-30/30 1T		
CN101	3113100012	BEAD PIN	D2.36*14.1, BRASS, SN		
CN102	3113100012	BEAD PIN	D2.36*14.1, BRASS, SN		
CN301	3113100012	BEAD PIN	D2.36*14.1, BRASS, SN		
CN503	3113100012	BEAD PIN	D2.36*14.1, BRASS, SN		
CN504	3113100012	BEAD PIN	D2.36*14.1, BRASS, SN		
CN600	3113100012	BEAD PIN	D2.36*14.1, BRASS, SN		

PLASTIC

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	3211102767	PLA, EXT-H, REAR, SC-428DX/VS+	348.4*315.1*257, ABS, OEM-3357		
	3231100012	CABLE TIE	L101.6*W25*T1		
	3261104069	PLA, V/R KNOB, SC-428VS(L)+/DX(L)	D22*15, ABS, OEM-3357		
	3261104072	PLA, V/R KNOB, SC-428VS(L)+	D28*15, ABS, OEM-3357		
	3261105687	PLA, PCB GUIDE(D), TOPAZ(N), TURQUIOSE(S)	24*120*21 ABS, OEM-3357		

CONNECTION PART

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	3314200012	MS+, PAN, W/P.W, ZPW	M3*8, SWRCH1018AK		
	3314200024	MS+, PAN, W/P.W, ZPW	M3*10, SWRCH1018AK		
	3314200036	MS+, PAN, W/P.W, ZPW	M3*12, SWRCH1018AK		
	3316800024	MS+, BND, W/T.L.W, ZPW	M3*8, SWRCH1018AK		
	3342500012	TS+, BND, W/P.W, B, ZPW	M3*8, SWRCH1018AK		
	3348500012	TS+, OVAL, 2, ZPW	M3*12, SWRCH1018AK		
	3361200259	PS+, PAN, ZPW	M4.5*14, SWRCH1018AK		
	3361400012	PS+, PAN, W/F, ZPW(WHR-9), 471P/472P	M4*12(SWRCH1018AK)		
	3364200036	PS+, HEX, W/S.W, ZPW	M4.5*24, WD19, SWRCH1018AK		
	3385200012	NUT, HEX, 2, ZPW	M3*0.5P, S10C		

PACKING

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	3411103725	BOX, SC-428VS+, SMATRON	441*415*443(SUK300*K200*SUK300)		
	3411103737	BOX, SC-428VSL+(ET)	441*415*443		
	3411104205	BOX, SC-439VS+(ET)	441*415*443		
	3411104217	BOX, (SAMTRON) SC-439VSL+(ET)	441*415*443(SUE300*K200*SUE300)		
	3421100589	S/FOAM, SC-428VS+(E)	430*420*108, EPS		
	3431100577	VINYL BAG, SET, SAMTRON	800*880, HDPE 0.02T, RECYCLING		
	3431100592	VINYL BAG, SIGNAL CABLE, SAMTRON	110*200, HDPE 0.05T, RECYCLING		

PRINT

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	3511105081	LABEL, WARNING, SC-431EII/VII	HIGH VOLTAGE		
	3511108015	LABEL, BOX, SC-4**, DOUBLE BACKING	105*110, ART PAPER		
	3511109446	LABEL, DPMS(SMATRON), SC-428VSL+(E), ETC.	80*30*0.038T		
	3511109924	LABEL BAR CODE	75*35		
	3511100062	LABEL UPC CODE(SDI) ALL	50*25		
	3511110074	LABEL PRODUCT(SAMTRON) SC-428VS+(E)T	109.8*59.8, OEM-3357		
	3511110086	LABEL PRODUCT SC-428VSL+(E)T	109.8*59.8		
	3511110098	LABEL PRODUCT SC-439VS+(ET)	109.8*59.8		
	3511110103	LABEL PRODUCT(SAMTRON) SC-439VSL+(E)T	109.8*59.8, OEM-3357		
	3511110433	LABEL PRODUCT(SAMTRON) SC-428VS+(E)T(C-J)	109.8*59.8, OEM-3357		
	3531103752	MANUAL USER'S SC-428, 439VS+(E)/VSL+(E)	US, GER		

CONNECTOT, WIRE

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	3641300999	WIRE, CONN/HOUSING	290MM, 3P, GY, W, BK, UL1672*22		
	3643100208	WIRE, RING TER, SINGLE	G/Y, D5.3, 150MM		
	3643700194	BRAID WIRE, RING W/TUBE	D5*120MM		
	3643700393	BRAID WIRE, CDT GND SC-428VS+	660/300/255, 2P, 1P, 16*3*0.16		
	365210021B	CORD, POWER, NORMAL, DETACH	SVT, 125V/7A, BK, 6FT, SHIELDED, T MARK		
	3652190048	CORD, POWER, NORMAL, DETACH	H05VV-F, 250V, BK, 6FT		
	3654100701	CABLE, SIGNAL, NON-DET	15P, 1705(1500)MM, SC-428UX(L), BK, MOLD		
	3663300063	CRT SOCKET	D26, ISH-19		
CN103	3641300951	WIRE, CONN/HOUSING	220MM, 5395-06, BK, BN, R, O, W, 5395-06		
CN401	3641301072	WIRE, CONN/HOUSING	280MM, 7P-S, 2.5, 1354*28, RGB, OP14A, 7P-S		
CN401	3661500075	CONNECTOR SHROUNDED HEADER	2.5, ST, 11P, 5267-11A		
CN501	3641301072	WIRE, CONN/HOUSING	280MM, 7P-S, 2.5, 1354*28, RGB, OP14A, 7P-S		
CN502	3641300951	WIRE, CONN/HOUSING	220MM, 5395-06, BK, BN, R, O, W, 5395-06		
GND1	3643100446	WIRE, RING TER, SINGLE	BK, D4.3, 160MM, 1672*22, PIN		
GND5	3643100446	WIRE, RING TER, SINGLE	BK, D4.3, 160MM, 1672*22, PIN		
J1-18	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1XO.6, SAD		
J103	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1XO.6, SAD		
J20-39	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1XO.6, SAD		
J41-	3618100012	WIRE, BARE	CU+SN+PB, 1ST, 1XO.6, SAD		

PTHER METAL

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	3942200024	TUBE-SHRINK, WHT	D4, POLY-OLEFIN		

[2] Reliabilities

2-1. Life test.(MTBF)

The monitor shall have 50,000hrs MTBF when operated under any combination of conditions as detailed specification.

2-2. Environmental Test.

The monitor unit must not be degradiated and damaged by operating over the specified range and will meet specifications when returned to the operating environment.

SDD will perform these tests on the monitor prior to its release.

The monitor is required to pass these tests before mass production.

These tests are detailed in SDD environment specification.

2-3. Temperature Test.

*Operting : 0℃ To 45℃

*Storage : −40℃ To +70℃

2-4. Humidity Test.

*Operting : 15% To 80%(Non condensing)

*Storage : Maximum 90%

2-5. Altitude.

*Operating : 0~10,000 ft

*Non operating : 0~15,000 ft

2-6. Safety and approvals.

2-6-1. Electromagnetic ieterfercence.

The system will be certified according to the following international radiation standards.

1) Radiated emission.

*FCC 47 CFR Ch 15, SUB. J

*CISPR rules, CISPR 22

*BZT DIN VDE 0871/BMPT-Vfg. 243/1991

*DOC SOR/88-475

2) Conducted emission.

The monitor electronics shall not be customer accesable, same as above. 1)

2-6-2. Safety approval.

The system will be certified according to the following international safety standards.

*UL 1950 WITH D3

*CSA C22.2 No.950 WITH D3

*TUV-EN60950

2-6-3. Ergonomics.

The complete assembly shall be certified as complying with the follwing international standards.

*TUV/CTS : ZH 1/618/10.80

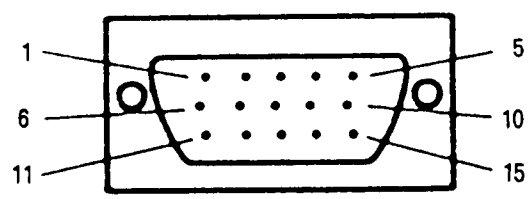
*TUV/ERGONOMIE : ISO 9241. PART 3

[3] Signal cable pin connection

*SIGNAL CABLE PIN CONNECTION(15PIN D-SUB MINIATURE SIGNAL CONNECTOR WITH CABLE)

NO	RGB/ANALOG SIGNAL	SIGNAL PIN NO.	WIRE COLOR	REMARKS
1	RED	PIN #1	RED/WHITE	
2	GREEN	PIN #2	GREEN/WHITE	
3	BLUE	PIN #3	BLUE/WHITE	
4	GROUND	PIN #4	BLACK	
5	GROUND	PIN #5		
6	RED GROUND	PIN #6	BLACK	
7	GREEN GROUND	PIN #7	BLACK	
8	BLUE GROUND	PIN #8	BLACK	
9	N.C	PIN #9		
10	SYNC GROUND	PIN #10	BLACK	
11	GROUND	PIN #11	BLACK	
12	N.C	PIN #12		
13	H-SYNC	PIN #13	WHITE	
14	V-SYNC	PIN #14	YELLOW	
15	N.C	PIN #15		

PIN ASSIGNMENES



1. RED VIDEO	6. RED GND	11. SYNC GND
2. GREEN VIDEO	7. GREEN GND	12. N.C
3. BLUE VIDEO	8. BLUE GND	13. H-SYNC
4. GND	9. N.C	14. V-SYNC
5. GND	10. GND	15. N.C

SERVICE MANUAL REVISION RECORDS

REV. NO.	REVISED PAGE	DESCRIPTION OF REVISION	DATE	REMARK
A	-	MAKING OUT SERVICE MANUAL	'94. 6. 20	

SAMTRON

14″ SUPER VGA COLOR MONITOR

SERVICE MANUAL

SC-4＊＊VS/L+(ET)

SPECIFICATION

Picture tube	M34KUK35＊03(E) : SC-428VSL+(ET) M34KRH35＊52 : SC-428VS+(ET) M34KUK55＊03 : SC-439VSL+(ET) M34KRK55＊04 : SC-439VS+(ET) 14 Inches diagonal 90 degree deflection, 0.28mm dot pitch, black matrix
Input signal	Video : 0.7Vp-p Analog level positive Sync : TTL level
Display colors	Any Colors
Synchro-nization	Horizontal : 31.5KHz 35.2KH 35.5KHg 37.8KHz Vertical : 60/70/72KHz/43.5Hz(I)
Resolution	640 dots(H)×350Line(V) 640 dots(H)×400Line(V) 640 dots(H)×480Line(V) 800 dots(H)×600Line(V) 1024 dots(H)×768Line(V)(I)
Video band width	40MHz(−3dB)
Display area	Horizontal : 240±4mm Vertical : 187±4mm
Ac Input voltage	AC88V ~ 269V(50/60Hz)
Power consumption	70W(MAX.)
Dimension	354(W)×387(D)×365(H)MM (WITH STAND)
Ship Weight	13.7kg
Weight	11.7kg

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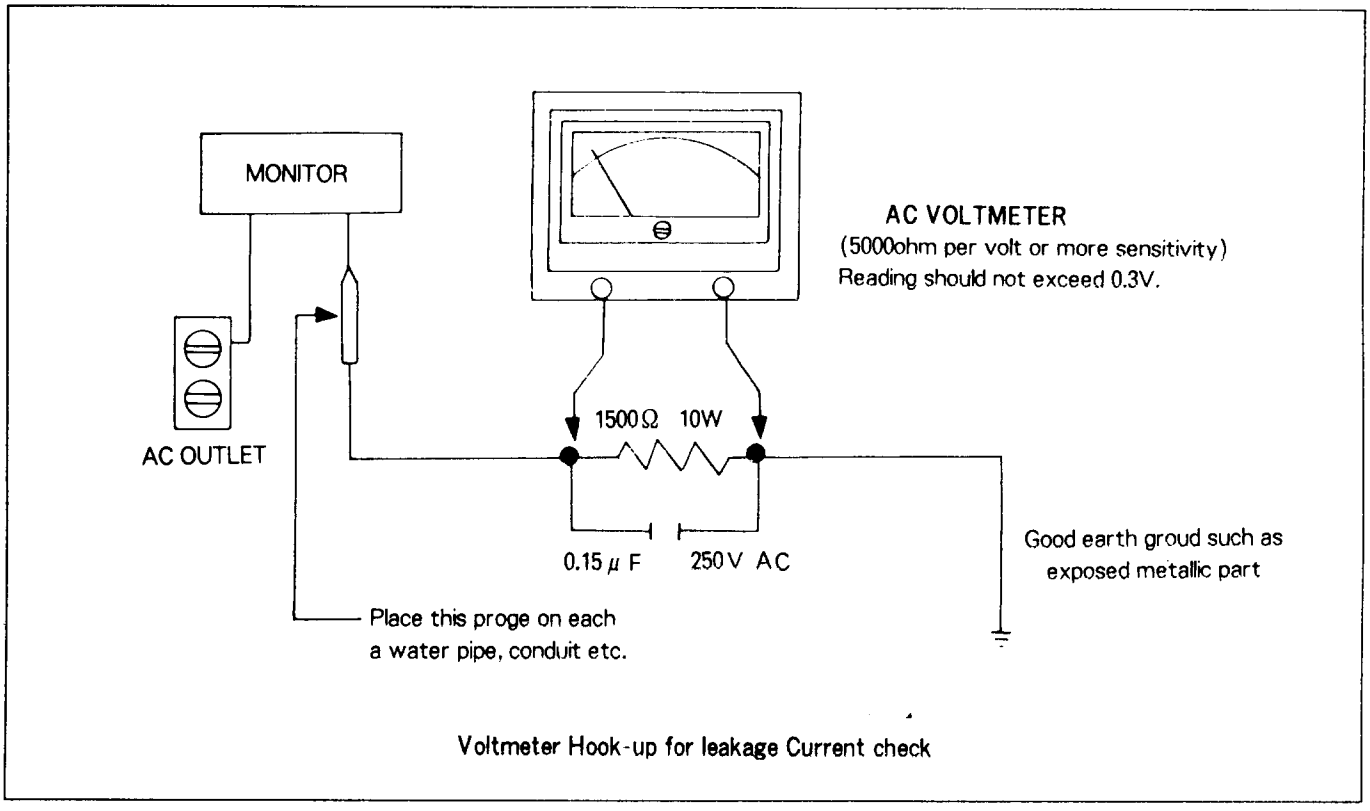
1. GENERAL INFORMATION

(1) SAFETY PRECAUTION

WARNING : Service should not be attempted anyone unfamiliar with the necessary precautions on this unit.
The following precautions are necessary during servicing.

1. Some parts such as a picture tube in this unit have special safety-relate characteristics for X-RAY RADIATION protection.
   For continued safety, the parts replacement should be undertaken referring to item 2 below.
2. Many electrical mechanical parts in this unit have special safety-related characteristics for protection against shock hazard and others.
   These characterstics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage wattage, etc.
   Replacement parts which have these special characteristics are identified in the manual and supplements by shading on the schematic diagram and the parts list.
   Before replacing of these components read the parts list in this manual carefully
3. When replacing chassis in the cabinet, always be certain that all the protective devices are installed properly, such as insulating covers, strain relief, etc.
4. Before replacing the back cover of the set, thoroughly inspect inside the cabinet to see that no stray parts or tools have been left inside.
5. Before returning the set to the customer always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as terminal, screwheads, metal overlays, control shafts, etc, To be sure the set in safe to operate without danger of electrical shock, Plug the AC line cord directly into a 115V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner.
   Connect a 1500ohm, 10watt resistor, paralleled by a 0.15mfd (μF), 250VAC capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time.
   Measure the AC voltage across the combination of 1500 ohm resistor and 0.15mfd(μF) capacitor, Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part.
   Votage measured must not exceed 0.3V RMS. This corresponds to 0.2mA AC any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



Voltmeter Hook-up for leakage Current check

[2] DOCUMENT DESCRIPTION

This is technical specification for a SC-4 * * VS/L+(ET) Color display monitor.
This document contains information on all technical details of the monitor.

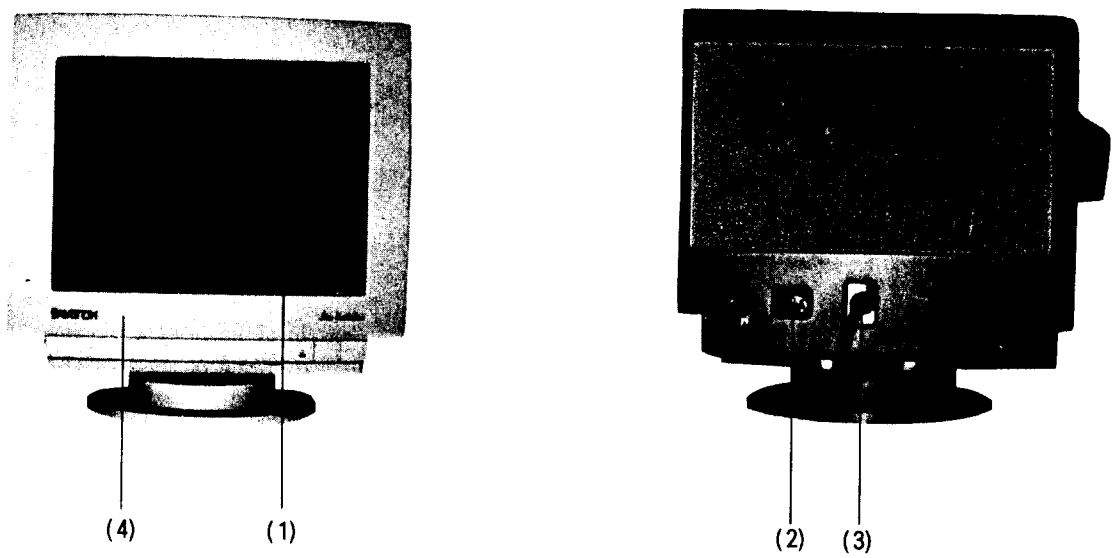
[3] PRODUCT DESCRIPTION

This SC-4 * * VS/L+(ET) Color display monitor to be operated in Analog Drive mode in put a highlight of these are provided below.

- Resolution : 640 Dots × 350 Lines
  640 Dots × 400 Lines
  640 Dots × 480 Lines
  800 Dots × 600 Lines
  1024 Dots × 768 Lines
- Display capability : up to 2400 Characters
- Active display area : Horizontal : 250 ± 4mm
  Vertical : 187 ± 4mm
- Horizontal frequency : 31.5KHz/35.2KHz/35.5KHz/37.8KHz
- Vertical frequency : 60/70/72Hz/43.5Hz(I)

USING COLOR DISPLAY MONITOR

Meting SC-4 * * VS/L+(ET) Color display monitor.
Refor to the diagram below to be sure that your SC-4 * * VS/L+(ET) package includes all the items in this picture.
Save the orginal box and packing materials in case you have to ship or transport.



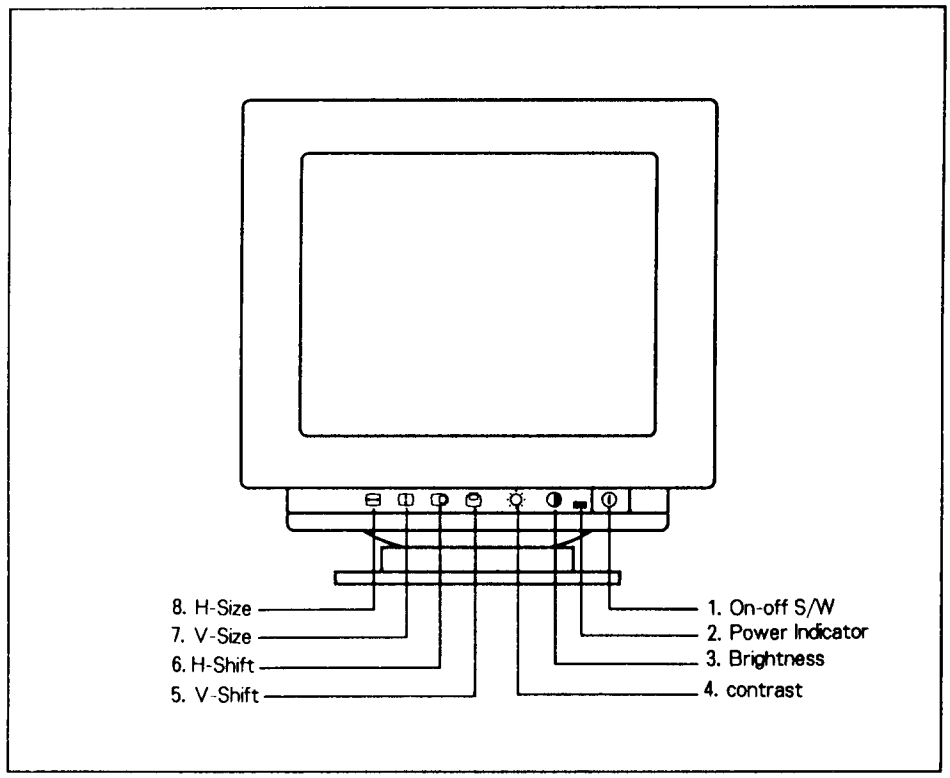
(1) Color display monitor
(2) Power Input
(3) Signal cable
(4) Swivel/Tilt stand

(4) USER ADJUSTMENTS

Apply power and analog video signal to the data display

1. ADJUSTING THE FRONT CONTROLS

FRONT VIEW



1. The On-Off Switch : The on-off switch of Monitor is in the lower right-hand corner. To turn the Monitor on, push the switch. You will see the light of the power indicator. To turn the Monitor off push the switch again. The power indicator will go out.
2. The Power Indicator : Green light.
3. Brightenss control : Intensifies screen illumination.
4. The Contrast Control : Rotationg it increases or decreases the degree of difference between the lightest and darkest sections on the screen.
5. Vertical shift : Adjustment for vertical alignment.
6. Horizontal shift : Adjustment for horizontal alignment.
7. Vertical size : Adjustment for vertical height.
8. Horizontal size : Adjustment for horizontal width.

2. CHARACTERISTICS

(1) GENERAL CHARACTERISTICS

NO	Description	Nominal	Remark
1	CDT(Color Display Tube)	M34KUK35＊03(E) : SC-428VSL+(ET) M34KRH35＊52 : SC-428VS+(ET) M34KUK55＊03 : SC-439VSL+(ET) M34KRK55＊04 : SC-439VS+(ET)	
2	CDT Phosphor	P 22 Dark Phosphor	
3	D.Y Deflection Angle	90°	
4	Resolution	640×350, 640×400, 640×480, 800×600, 1024×768Lines	Graphic Mode
5	Sync. Frequency	H : 31.5KHz/37.8KHz/35.2KHg/35.5KHg V : 60Hz/70Hz/72Hz/43.5Hz(I)	
6	Input Signal	R. G. B Anglog	
7	AC Input	88V~269V	Free Voltage
8	Display Color	Unlimited	
9	Display Zone	H : 250mm, V : 187mm	
10	Display Character	Up To 2400 Characters	

(2) Electrical Characteristics

2-1. Input Power

The display device shall maintain the specified performances in the range described below.

NO	Description	Nominal	Remark
1	Power Source	AC 88V~269V	Universal Power
2	Frequency	47~63Hz	
3	Power Consumption	MAX. 75W	

2-2. Input Signal

The input signals shall be applied to the display devices through a signal cable which must be intended as part of the monitor. (Ref. Fig 1 Timing chart)

Section	Description	Nominal	Remark
Video Signal Red Green Blue	Video input	0.0 to 0.7V_{P-P} Analog	
	Polarity	Positive	
	Pixel Rate	Up to 40MH_z	
	Rise/Fall Time	Less than 8 nesc	
	Input impedance	75 Ohms	
Horizontal -Sync.	Sync input	2.4 ≦ Level ≦ 5V	
	Pulse Width	1.27~3.77 usec	
	Frequency	31.5/37.8H_z/35.2KHg/35.5KHg	
	Front Porch	0.76~1.12 usec	
	Back Porch	1.89~4.6 usec	
Vertical -Sync	Sync Input	2.4V ≦ Level ≦ 5V	
	Pulse Width	0.064~0.106 msec	
	Frecuency	60/70/72H_z/43.5H_z(I)	
	Front Porch	0.026~1.2 msec	
	Back Porch	0.607~1.88 msec	

2-3. CRT Electrode voltage

NO	Description	Nominal	Remark
1	Heater	6.3V±0.5V, 630mA±30mA	
2	Cathode(R. G. B)	70V±20V	
3	Gride #1	−10V~−90V	
4	Gride #2	500V±50V	Screen
5	Gride #3	6.5KV±0.5KV	Focus
6	Anode Voltage	24KV±1KV @0UA	

2-4. Timing Characteristic

The monitor shall be capable of displaying 3 different vertical resolution within the scan frequencies range as well as the scanning mode. (REF. FIG 1 TIMING CHART)

(3) MECHANICAL CHARACTERISTICS

3-1. Weight

The total weight shall be less approximate 13.7kg.

3-2. Tilt/Swivel

The inclination of the suface of the screen shall be adjustable at least −5deg. and +14deg. With a min. 1deg. from the vertical. The swivel must be min. 180deg.

3-3. Tool Resin

Tool	Resin	Color
Front	ABS	PARCHMENT WHITE
Rear	ABS	PARCHMENT WHITE
Stand	ABS	PARCHMENT WHITE

3. SERVICE ADJUSTMENT

1. +B VOLTAGE ADJUSTMENT

* Disconnect the signal cable from signal source.
* Set contrast and brightness control at maximum and G2 control to minimum position.
* Make sure the AC power supply voltage is at the specified value.
* Adjust +B-ADJ, volume(VR101) on the display PCB for 87.0 ± 0.5V

2. HORIZONTAL DEFLECTION CIRCUIT ADJUSTMENT

2-1. Horizontal oscillation circult adjustment. (H-HOLD)

* Disconnect the signal cable from signal source.
* Turn the H-HOLD volume(VR303) for the horizontal frequency equal to 31.7 ± 0.2KHz

2-2. Horizontal position adjustment. (H-SHIFT)

* Receive a cross-hatch pattern signal of 800 × 600(f_H = 37.8KHg) mode.
* H-SHIFT(VR304) controls the picture position at the CDT screen.
  Users set this knob so that the picture is positioned at almost center of the CDT screen.

2-3. Horzontal size adjustment(H-SIZE)

* Receive a cross-hatch pattern signal of 800 * 600 (fH = 37.8KHz) mode.
* Set contrast and brightness ontrols at there maximum positions.
* Adjust H-WIDTH control(VR801) so that a width becomes 250 ± 5mm.

3. VERTICAL DEFLECTION CIRCUIT

3-1. Vertical Size adjustment. (V-SIZE)

* Receive a cross hatch pattern signal of 800 × 600 (fH = 37.8KHz) mode.
* Adjust V-SIZE(VR301) volume so that the height of the pattern becomes 187 ± 5mm.

3-2. Vertical position adjustment (V-SHIFT).

* Receive a cross hatch pattern signal of 800 × 600(fH = 37.8KHg) mode.
* Set the V-SHIFT volume(VR201) at the appropriate position so that the raster is positioned at almost the center of the CDT screen.

4. VIDEO CIRCUIT ADJUSTMENT

4-1. Controls function.

* Brightness volume. (VR803)
  This knob controls mainly intended as a raster luminance adjusted.
* Sub-Brightness volume. (VR802)
  This control adjust the cut off point of the raster.
* R. G. B. gain volume. (VR401, VR402, VR403)
  This volume adjust the gain of RED, GREEN BLUE video pre amplifier.
* .R. G. B bias volumes. (VR501R VR501G, VR501B))
  This volumes controls the bias voltage of RED, GREEN, BLUE cathode of CDT.
* Contrast volume. (VR404)
  This knob shall vary the gain of the video amplifier thus adjusting the contrast of the displayed image, and not effect on the raster luminance.
* Screen volume. (On the FBT)
  This volume controls the G2 voltage.
* Focus volume. (On the FBT)
  This volume controls the focus of the picture.

5. FLASHOVER PROTECTION

Due to the high voltage within this tube, internal flashover occur.
Protection must be provided using spark gap to prevent flashover from destroying the cathode or other internal circuit.
These spark gaps shall be connected with each electrode in socket assembly.

6. X-RADIATION CHARACTERISTICS

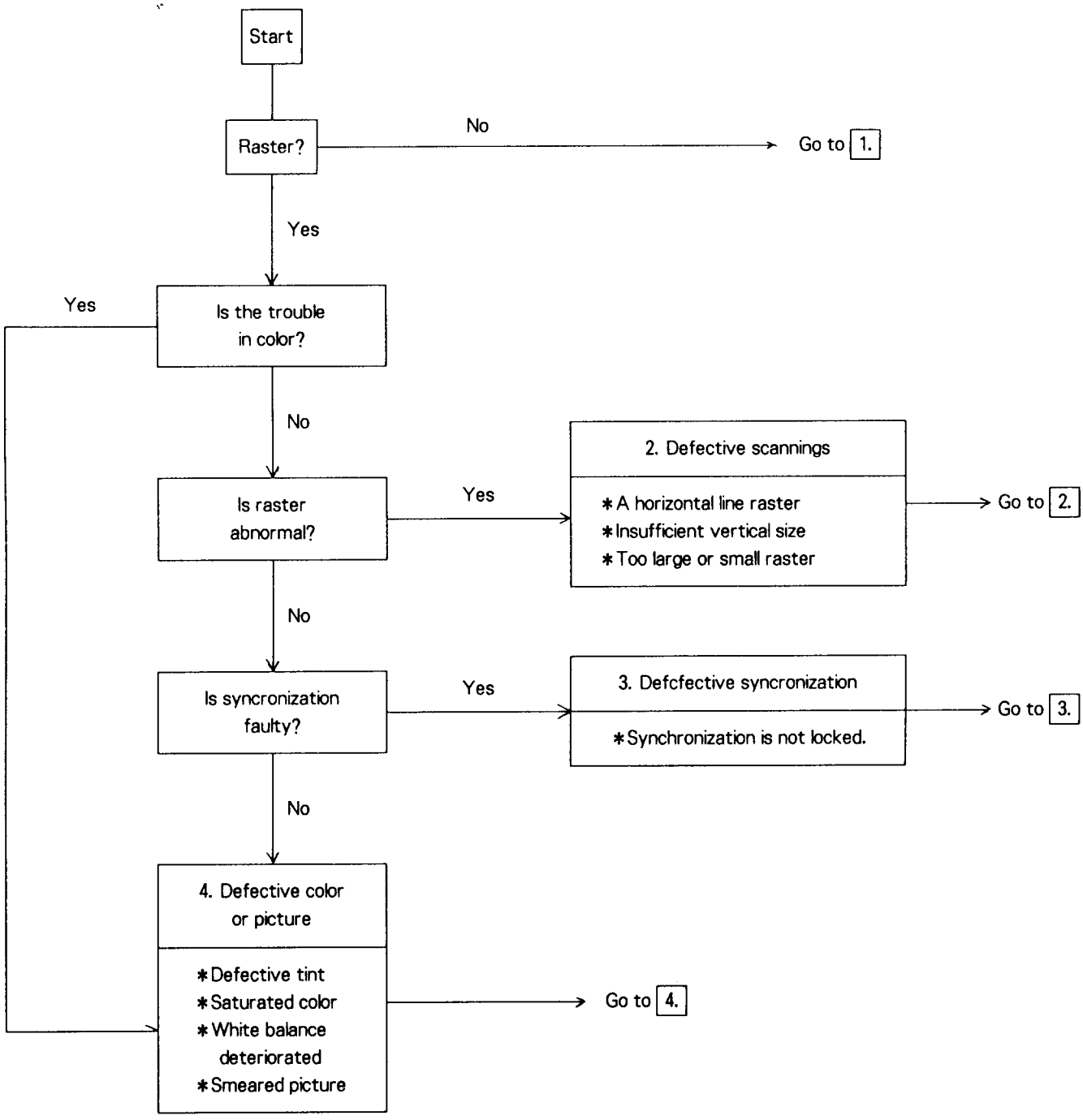
The X-radiation emitted from this pocture tube will not exceed 0.5mR/h for anode current combination.
X-radiation at a constant anode voltage varies linearly with anode current.

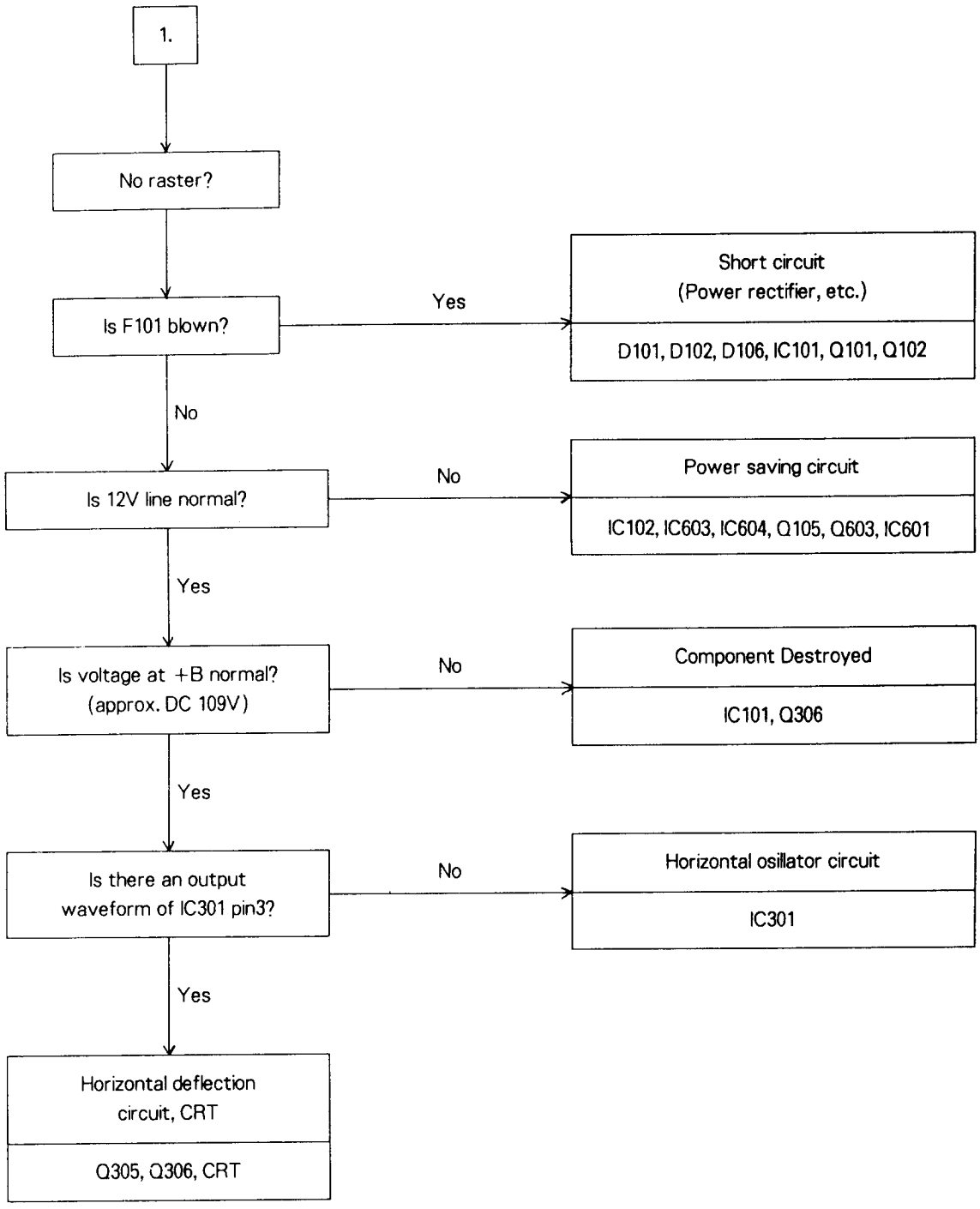
7. F/V adjust

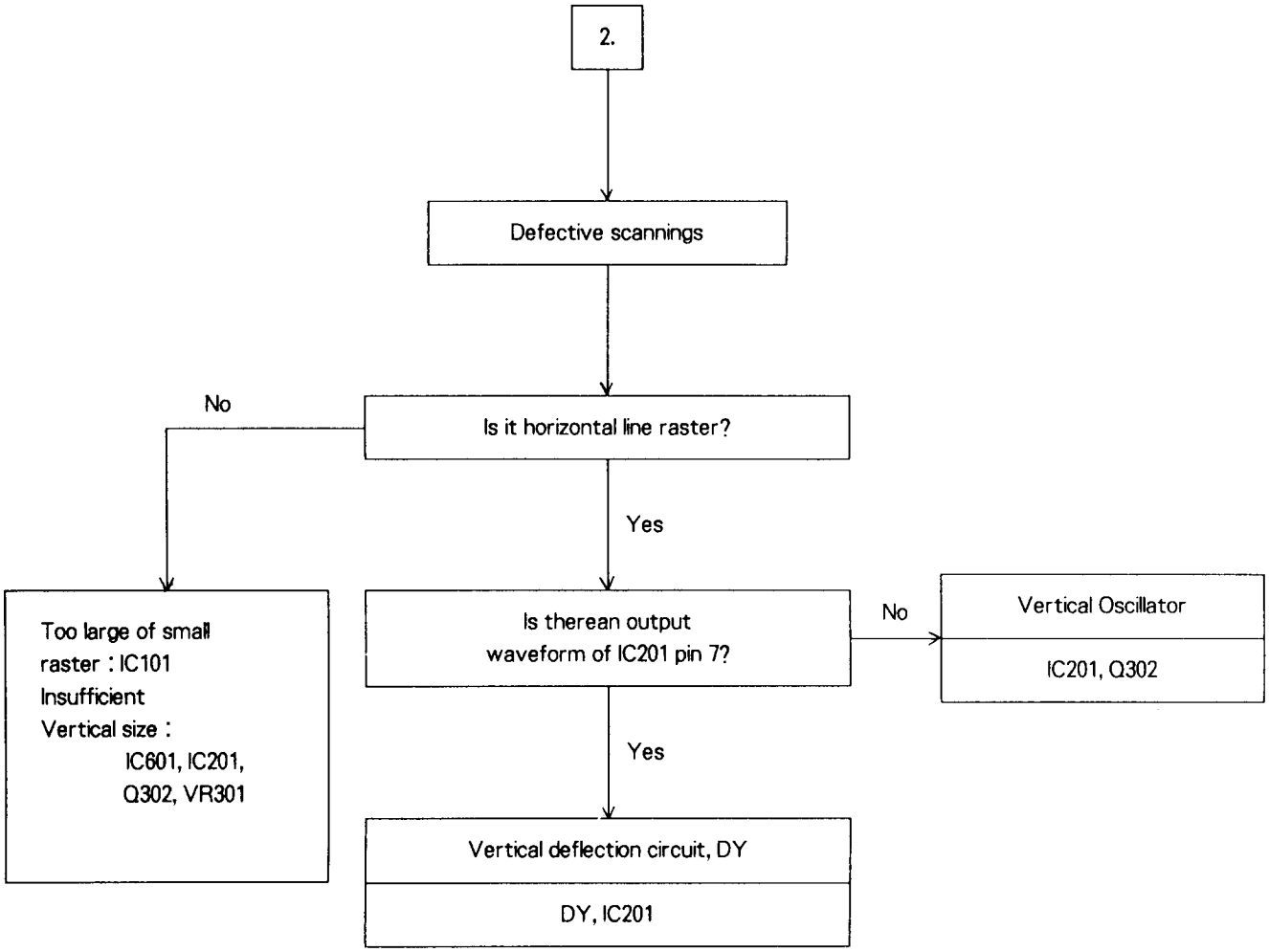
*Receive the any signal of $800 \times 600 (f_H = 35.2KH_Z)$mode.

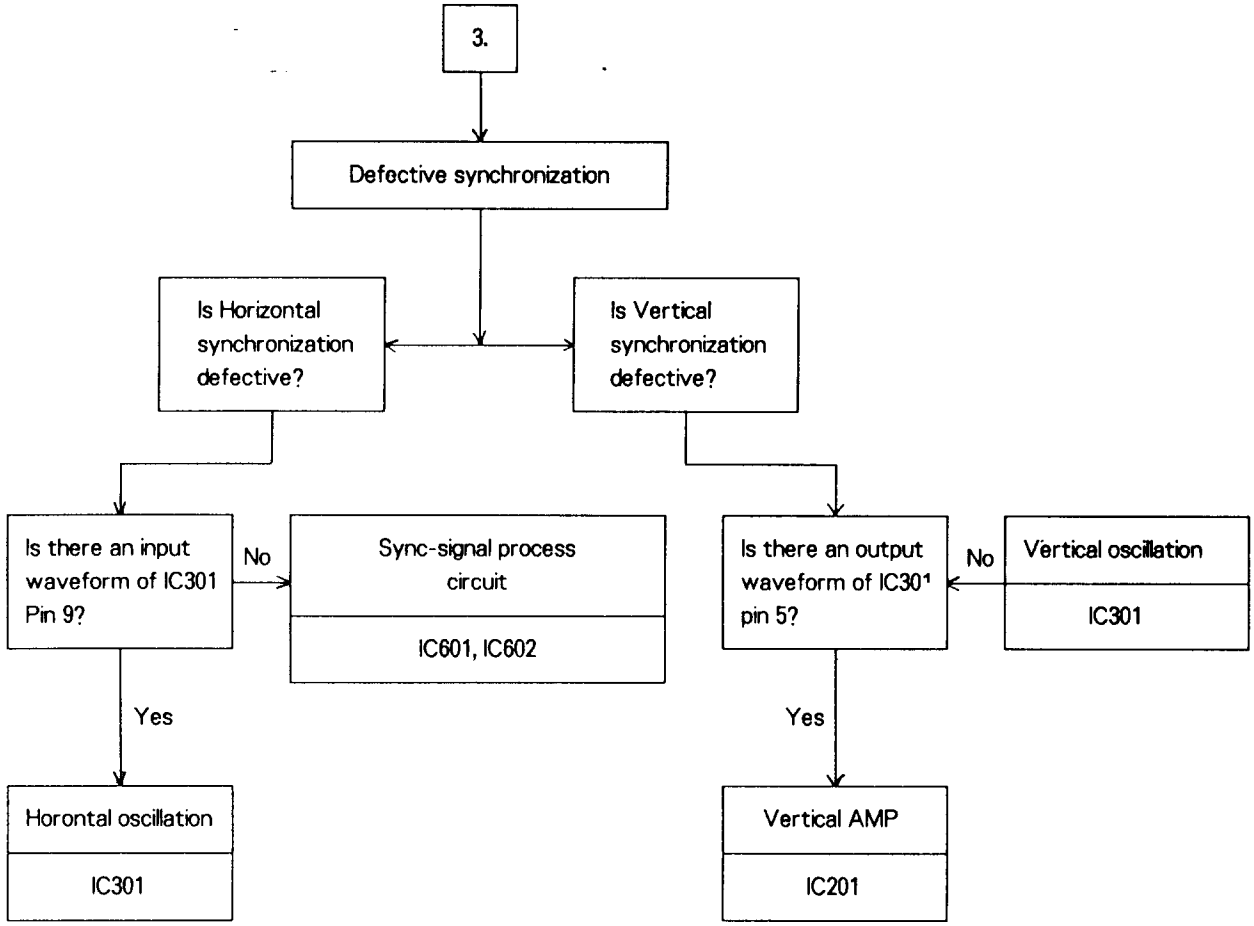
*Adjust VR601(F/V) for the voltage equal to 4.2~4.5V at the point of CN600(CHECK).

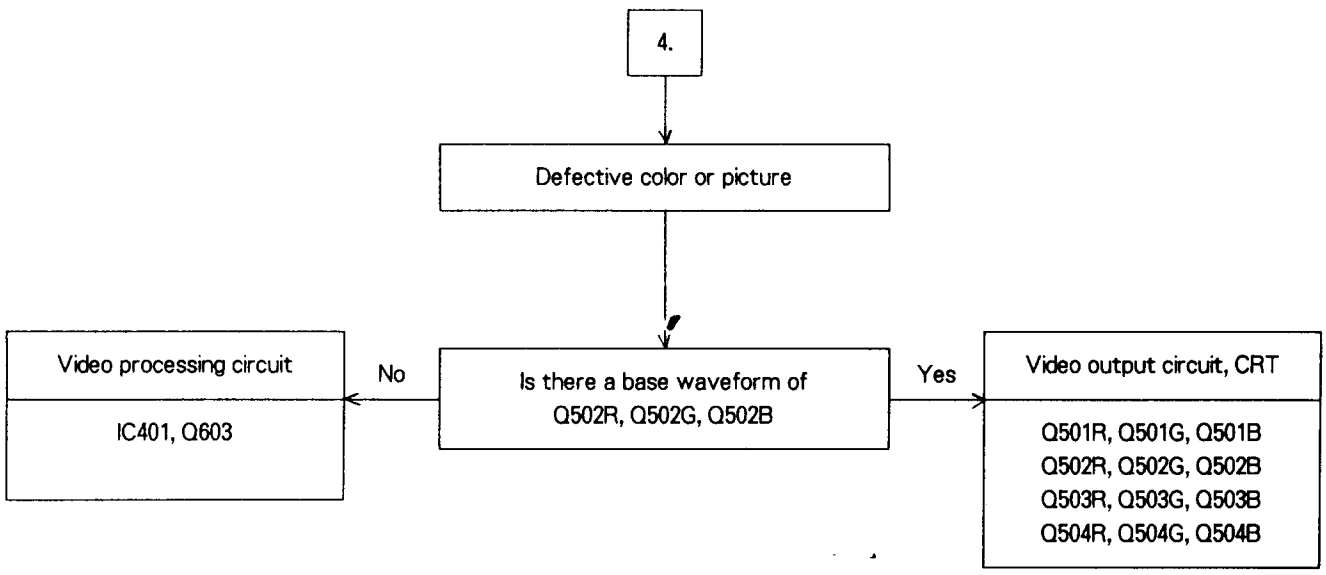
4. TROUBLE SHOOTING




1.
No raster?
Is F101 blown?
Yes
Short circuit
(Power rectifier, etc.)
D101, D102, D106, IC101, Q101, Q102
No
Is 12V line normal?
No
Power saving circuit
IC102, IC603, IC604, Q105, Q603, IC601
Yes
Is voltage at +B normal?
(approx. DC 109V)
No
Component Destroyed
IC101, Q306
Yes
Is there an output
waveform of IC301 pin3?
No
Horizontal osillator circuit
IC301
Yes
Horizontal deflection
circuit, CRT
Q305, Q306, CRT


2.
Defective scannings
No
Is it horizontal line raster?
Yes
Too large of small
raster : IC101
Insufficient
Vertical size :
IC601, IC201,
Q302, VR301
Is therean output
waveform of IC201 pin 7?
No
Vertical Oscillator
IC201, Q302
Yes
Vertical deflection circuit, DY
DY, IC201


3.
Defective synchronization
Is Horizontal synchronization defective?
Is Vertical synchronization defective?
Is there an input waveform of IC301 Pin 9?
No
Sync-signal process circuit
IC601, IC602
Yes
Horontal oscillation
IC301
Is there an output waveform of IC301 pin 5?
No
Vertical oscillation
IC301
Yes
Vertical AMP
IC201


4.
Defective color or picture
Video processing circuit
IC401, Q603
No
Is there a base waveform of Q502R, Q502G, Q502B
Yes
Video output circuit, CRT
Q501R, Q501G, Q501B
Q502R, Q502G, Q502B
Q503R, Q503G, Q503B
Q504R, Q504G, Q504B

5. THEORY OF OPERATION

The circuit of this monitor could be devided into four sections.
One of them is power supply section, and the others are the interface, sweep video, and CRT drive section.

1. POWER CIRCUIT

The switching mode power supply is adopted for universal power supply.
The chassis(secondary side) is insulated from the power source(primary side) by the transformer T101.
By the winding of the transformer T101 connected to the collector of IC101 and the other winding connected to the control circuit, the IC101 is submitted to negative feed back and it operates as a blocking oscillator.
When the voltage of power source or load current is varied, it is detected by the winding and the voltage is applied to pin2 of IC101.
When the voltage applied to pin2 is varied, the conducting time of IC101 is varied to compensate output voltage for the change.
Which makes output voltage of T101 stabilized.
The range of operating frequency is 22KHz~70KHz.

2. INTERFACE CIRCUIT

The mode is automatically controlled by this circuit.
This circuit is controlled by the sync. pulse polarity & frequency.
* Sync pulse polarity detection & compensation are performed by the IC601.
* Horizontal frequency is detected by the IC602. (Multi Vibrator), IC604(OP Amp)
* VGA modes are selected by the IC301 itself.

3. VIDEO DRIVE CIRCUIT(IC401 PERIPHERAL CIRCUIT).

The R. G. B video signals from computer are applied to the pre-amplifier LM1203(IC301).
This section amplifies the video signals enough to drive a video output circuit.
Video gain is controlled by the DC voltage of pin12, and DC bias is controlled by the DC voltage of the pin 15, 19 and 24.
Clamp pulse is applied to pin14 through Q601.

4. VIDEO OUTPUT CIRCUIT

The preamplified R. G. B video signals are applied to the cascode amplifier Q502R, G, B, and Q501R, G, B. And then, these video signals are drived to the cathodes of CRT through the single-ended-push-pull amplifiers. The CRT bias for correct white balance is obtained by R, G, B-BIAS controls VR501R, G, B.

5. DEFLECTION CIRCUIT

This circuit has two ICs(IC301, IC201). IC301 is a monolithic IC for the horizontal, vertical, and east/west correction processing. IC301 is a monolithic IC for the vertical power amplification.

5-1. Horizontal Deflection Circuit.

The horizontal sync. signal is applied to pin9 of IC301, the horizontal frequency of the oscillator can be varied by the RC constant at pin18, 19 and it can be controlled by adjusting the H-HOLD control(VR303). The feedback pulse from flyback is used for automatic frequency control at pin2, the phase of horizontal saw-tooth wave is compared with that of feedback pulse and sync. By adjusting the H-SHIFT control(VR304), the horizontal relative position between scanning raster and video is varied.
The output of IC301 at pin3 is fed to horizontal drive circuit(Q305). The pulse switching mode of the driver and output stage is reverse polarity type, that is when the Q305 is ON, the output tr. Q306 is OFF.
The horizontal output circuit is the resonant flyback system that is composed of deflection yoke, flyback trans.,etc. Flyback trans;supplies the several drive voltage for CRT. The diode modulation circuit makes east/west correction waveform throuhg IC301-Q801-Q802, and has the function of variable horizontal size.

5-2. Vertical Deflection Circuit

The vertical sync. signal is applied to pin10 of IC301, the vertical frequency of the oscillator can be varied by the RC constant at pin12, 16. Vertical screen size can be controlled by the voltage at pin13 of IC301, and vertical screen position is determined by DC current flowing through vertical DY(and can be controlled VR201).

IC201 is the vertical power amplifier that drives vertical DY.

6. EAST/WEST CORRECTION CIRCUIT

This circuit compensates the east/west distortion through the method of diode modulation.

The signal processing for east/west correction is done in IC301. The parabola waveform that is converted from vertical ramp is fed from the pin11 of IC301 to Q801.

The parabola amplitude can be controlled by VR302 at pin14 of IC301.

7. RPOTECTION CIRCUIT

If the failure which causes high voltage increased occurs(such as opened sweep capacitor or failed power regulator), the cathode voltage of D315 will be increased by the FBT.

Then the protection occurs by turn-on Q307 as a result of the breakdown of D315.

When this happens, the oscillation pulse of IC301 can no longer dirve Q305, then the operation of monitor is stopped. Therefore, in order to restart the operation of monitor, the monitor must be turned OFF, and ON again.

8. POWER SAVING CIRCUIT

This circuit detects the suspend signal on both sync. lines.

If any of both sync. line don't have sync. pulse, IC603 detects this and sends the suspend signal to IC102 in SMPS.

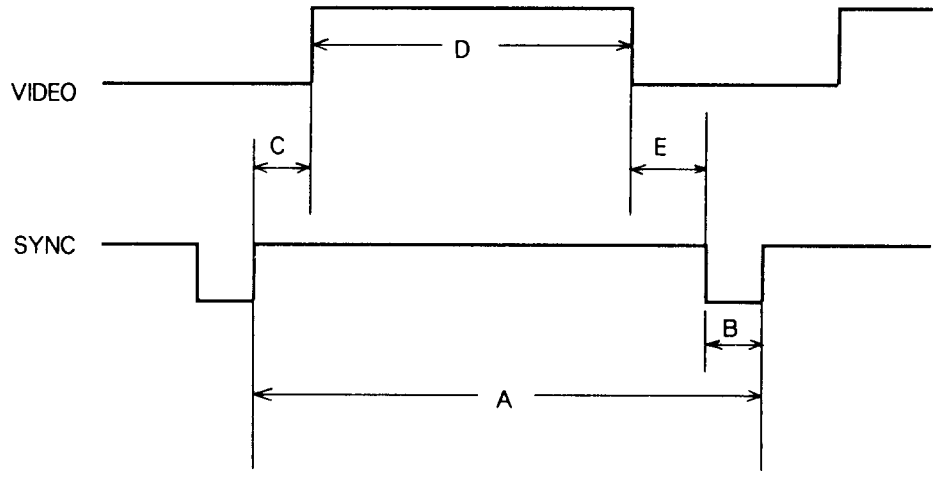
When IC102 receives suspend signal, the 12V power line opened and changed into suspend mode. In suspend mode high voltage and all circuits which use 12V power are killed.

Appended override circuit makes the monitor work as normal mode when signal cable disconnected from signal source.

If SW 102 switch in on then power saving circuit in not operated.

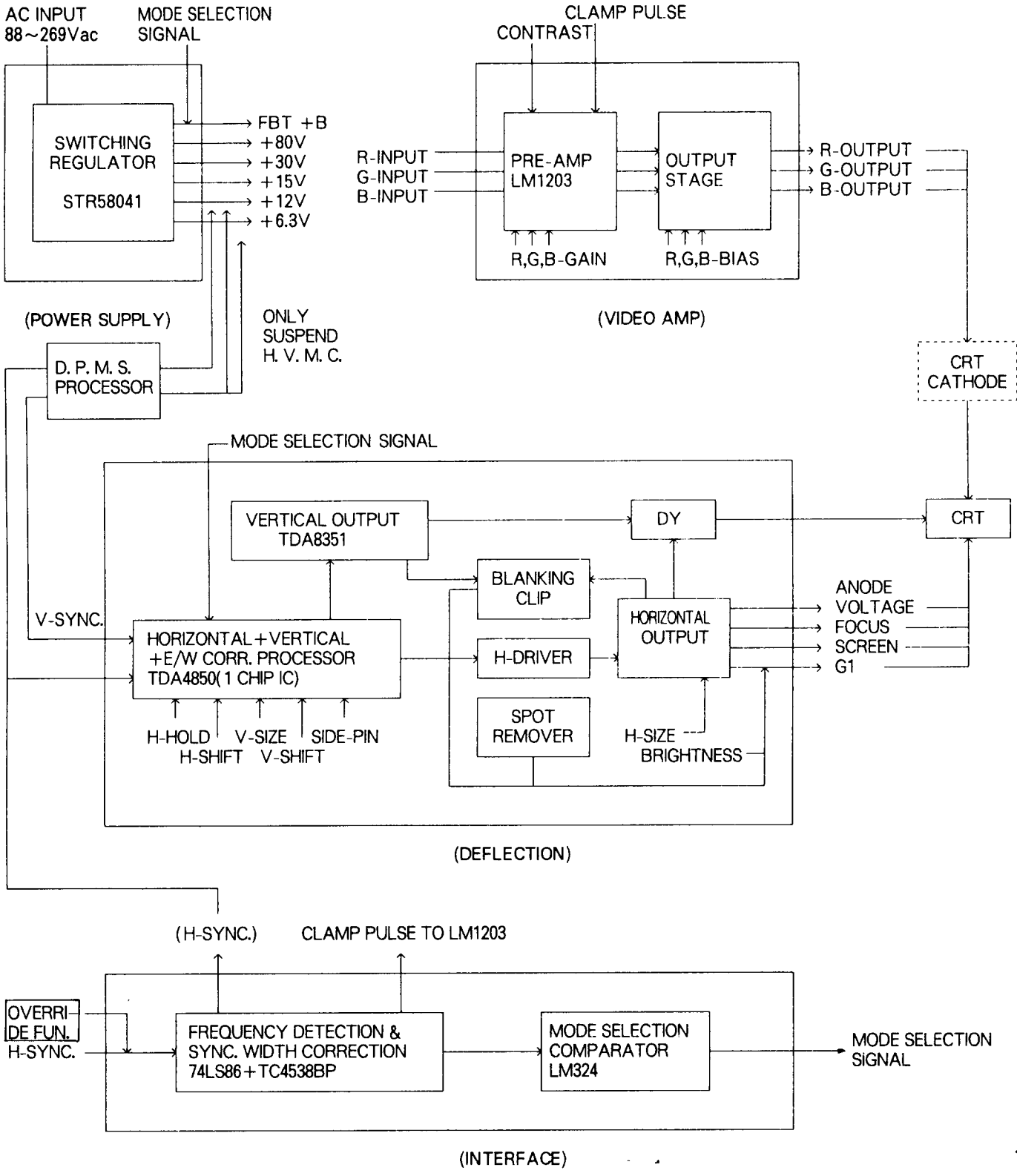
6. FIGURES

(1) Timing chart

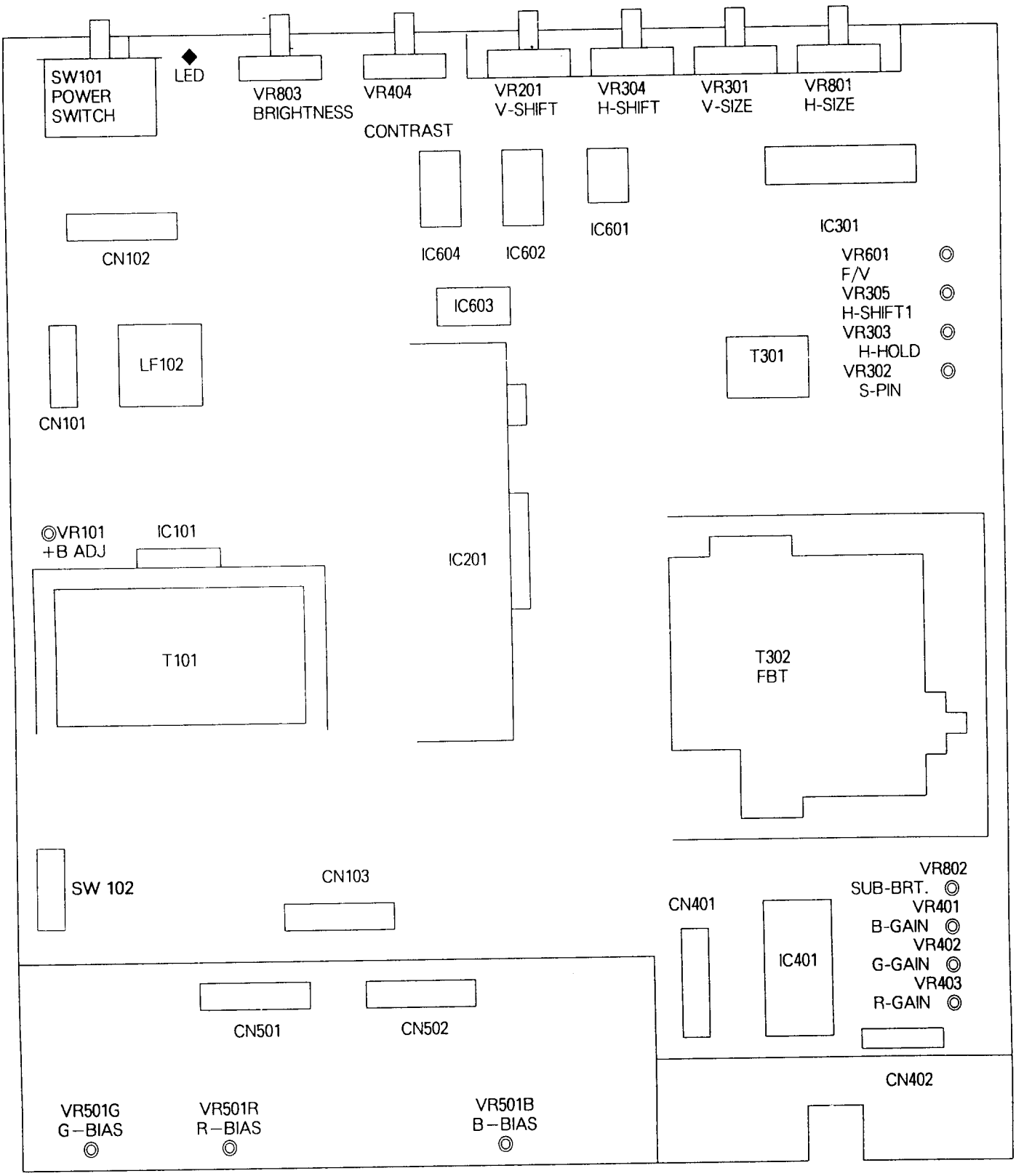


DESCRIP.		RESOLUTION						
		640 × 350	640 × 400	640 × 480		800 × 600		1024 × 768
H	fH	31.5KHz	31.5KHz	31.5KHz	37.8KHz	35.2KHz	37.8KHz	35.5KHz
	A	31.8nS	31.8nS	31.8nS	26.41uS	28.44uS	26.40uS	28.15uS
	B	3.81uS	3.81uS	3.81uS	1.27uS	2.00uS	3.20uS	3.92uS
	C	1.90uS	1.90uS	1.90uS	4.06uS	3.56uS	2.20uS	1.25uS
	D	25.4uS	25.4uS	25.4uS	20.32uS	22.22uS	20.00uS	22.80uS
	E	0.636uS	0.636uS	0.636uS	0.762uS	0.67uS	1.00uS	0.18uS
	POL.	POS.	NEG.	NEG.	NEG.	NEG.	POS.	POS.
V	fV	70Hz	70Hz	60Hz	72.8Hz	56Hz	60.3Hz	43Hz(I)
	A	14.27mS	14.27mS	16.68mS	13.735mS	17.78mS	16.579mS	11.50mS
	B	0.064mS	0.064mS	0.064mS	0.079mS	0.06mS	0.106mS	0.113mS
	C	1.907mS	1.112mS	1.049mS	0.740mS	0.60mS	0.607mS	0.563mS
	D	11.12mS	12.71mS	15.24mS	12.68mS	17.07mS	15.840mS	10.81mS
	E	1.176mS	0.381mS	0.381mS	0.238mS	0.03mS	0.026mS	0.014mS
	POL.	NEG.	POS.	NEG.	NEG.	POS.	POS.	POS.

[2] Block diagram



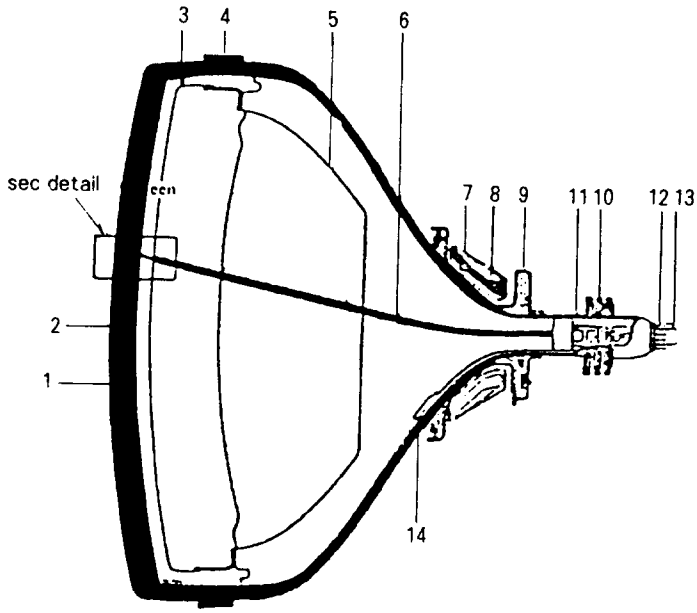
[3] Postion of control part on pcb



[4] CDT

5-1. STRUCTURE

CRT Basic Structure



No.
1. Panel galss.
2. Phosphor screen
3. Shadow mask
4. Tension band
5. Magnetic shield
6. Electron beam
7. Core
8. Vertical deflection coil
9. Horizontal deflection coil
10. Magnet Assembly
11. Electron gun
12. Outer lead
13. Base
14. Getter

- MASK : R. G. B. electron beam pass through this mask. Each gun's beam strikes the phosphor.
- DY (Deflection Yoke) : This moves the beam right to left and up to below, vice versa.
- MAGNET : These magnets decide the centering and convergence
- MOUNT : This generates thermal electrons, controls the amount of beam, accelerates the beam and focuses the beam at the screen.

5-2. Magent Assembly[C.P.M(convergence purity magent)]

2POLE, 4POLE, 6POLE

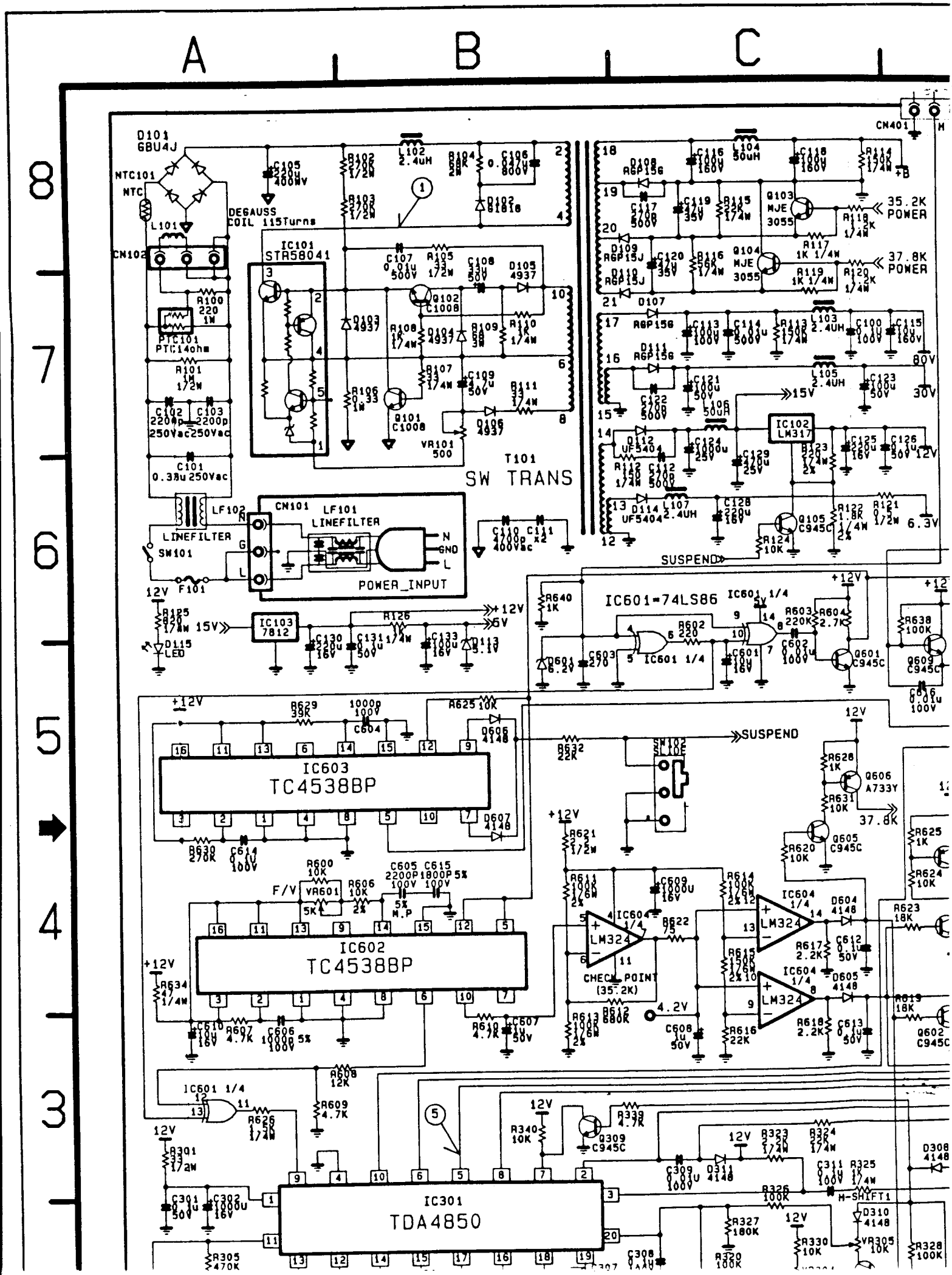
1) 2 pole magnet : Purity and VRS control.
2) 4 pole magnet : Convergence control-concentrates the R and Bbeam.
3) 6 pole magnet : Convergence control-the concentrated R and B beam by 4 pole magnet is adjusted to harmonize with G beam.

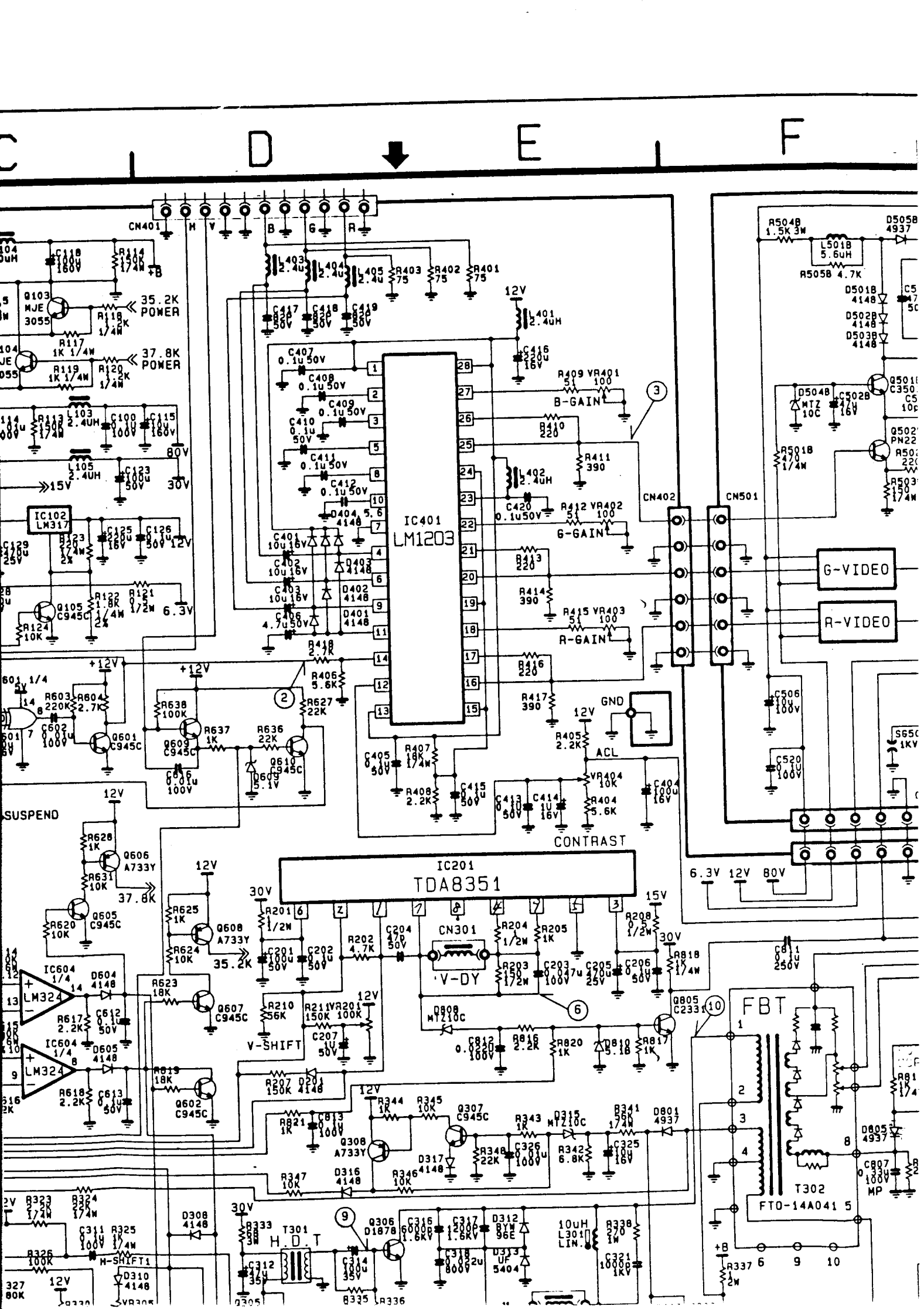
*1. Convergence : The degree of concentration of R. G. B. colors.
2. Purity : The degree of pure color.

The most important part of monitor is CDT.

5-3. White Balance Adjustment

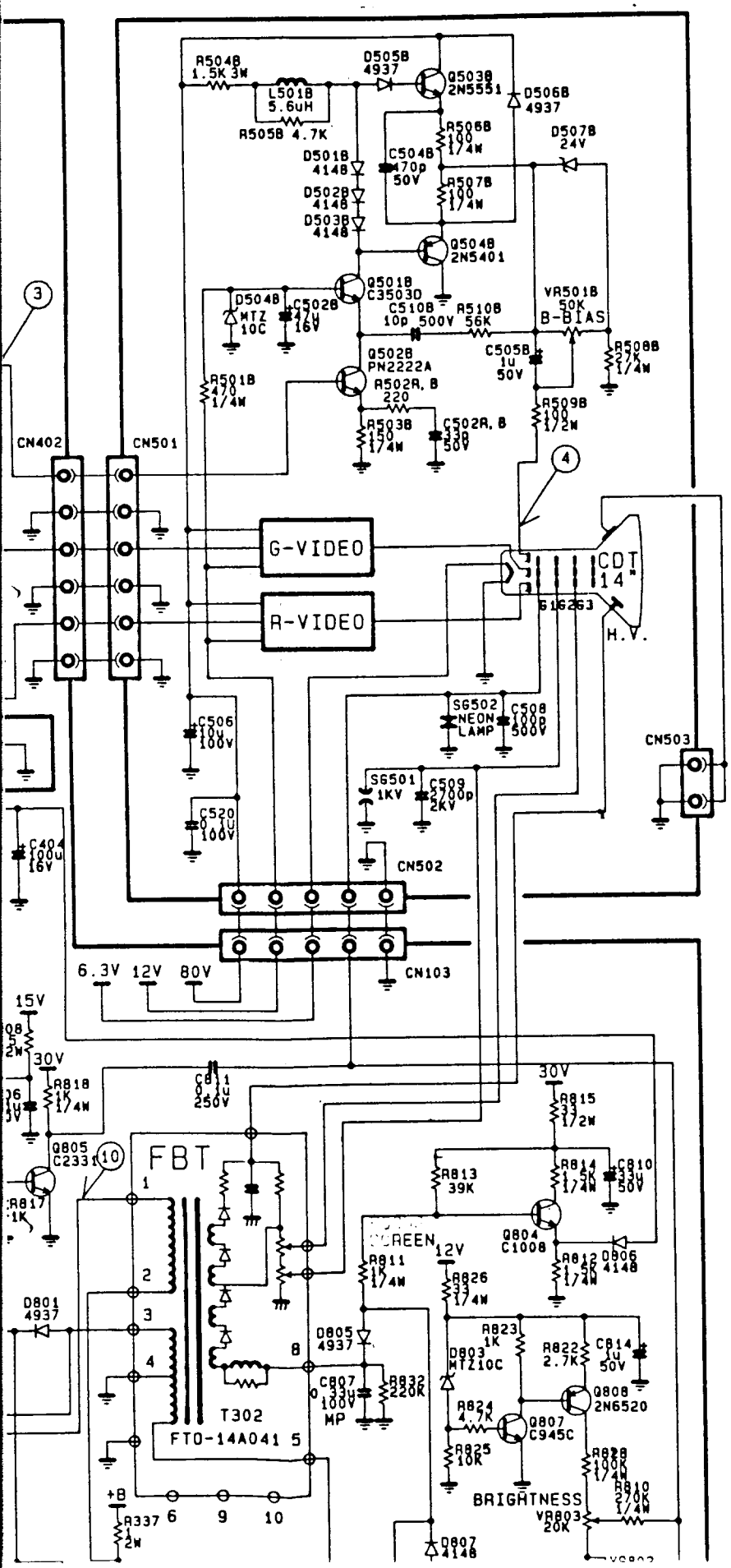
1) Adjust R and B bias controls in order that the color analyzer indicates $X=0.281\pm0.02$, $Y=0.311\pm0.22$ without video signal.
2) Apply video signal (Full Whith Pattern).
3) Adjust R and B gain controls in order that the color analyzer indicates $X=0.281\pm0.02$, $Y=0.311\pm0.22$ with max contrast.


A
B
C
8
7
6
5
4
3
D101
6BU4J
NTC101
NTC
L101
DEGAUSS
COIL 115Turns
CN102
IC101
STR58041
T101
SW TRANS
PTC101
PTC14ohm
LF102
LINEFILTER
SW101
F101
CN101
LF101
LINEFILTER
POWER_INPUT
VR101
500
IC103
7812
D115
LED
CN401
35.2K
POWER
37.8K
POWER
IC102
LM317
SUSPEND
IC601=74LS86
IC601 1/4
IC603
TC4538BP
IC602
TC4538BP
IC604
LM324
CHECK POINT
(35.2K)
4.2V
IC301
TDA4850
H-SHIFT1

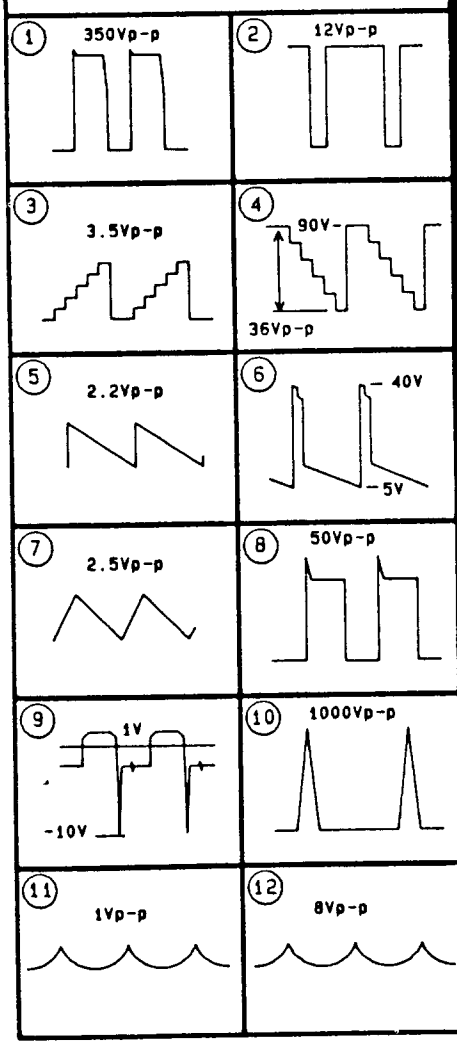

C D E F
CN401
H
V
B
G
R
IC401
LM1203
IC201
TDA8351
CN402
CN501
CN301
IC102
LM317
IC604
LM324
Q103
MJE
3055
35.2K
POWER
37.8K
POWER
B-GAIN
G-GAIN
R-GAIN
G-VIDEO
R-VIDEO
CONTRAST
ACL
SUSPEND
V-DY
V-SHIFT
H-SHIFT1
H.D.T
T301
T302
FBT
FTO-14A041
GND
12V
15V
30V
80V
6.3V
+B
+12V

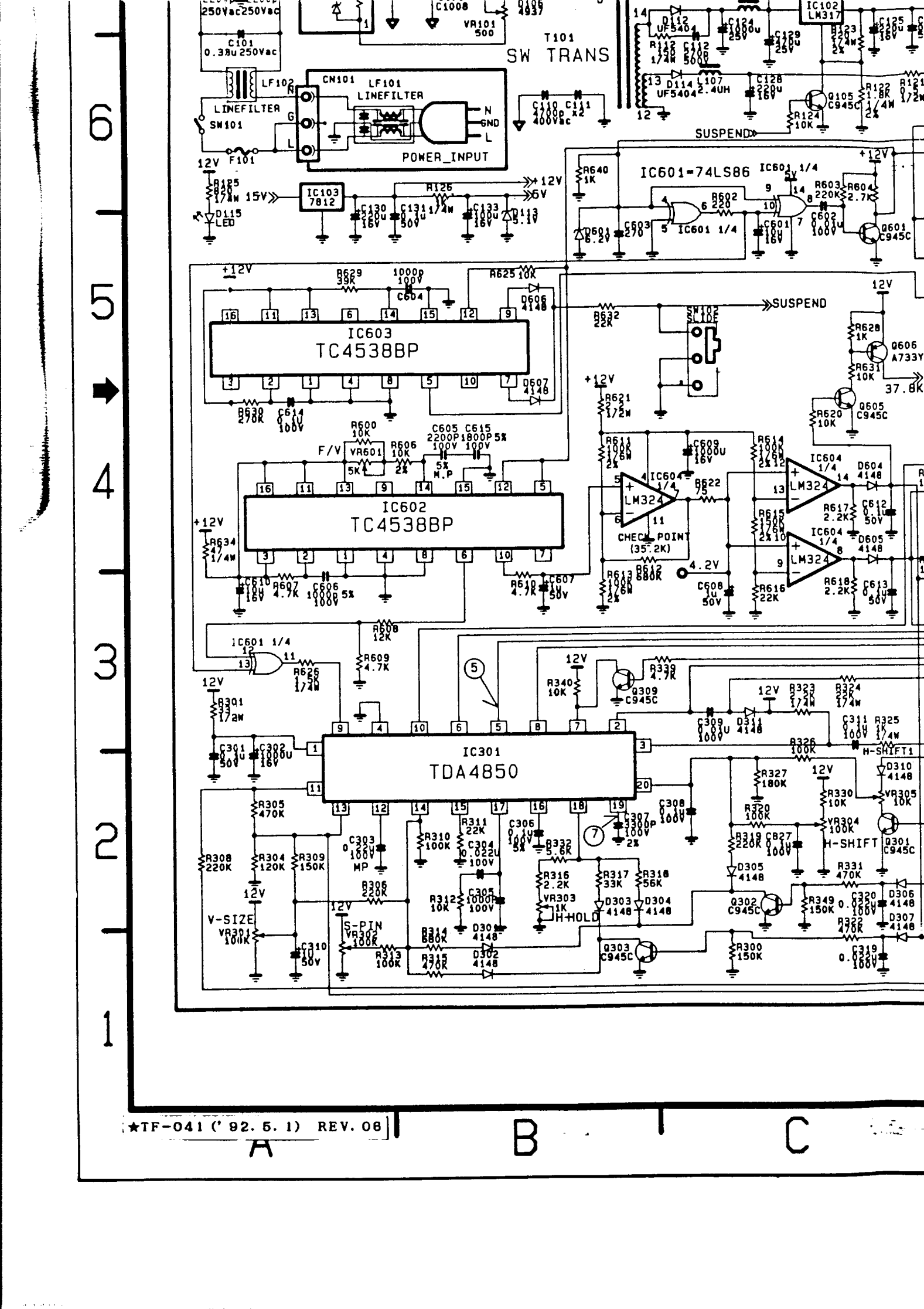
CONFIDENTIAL

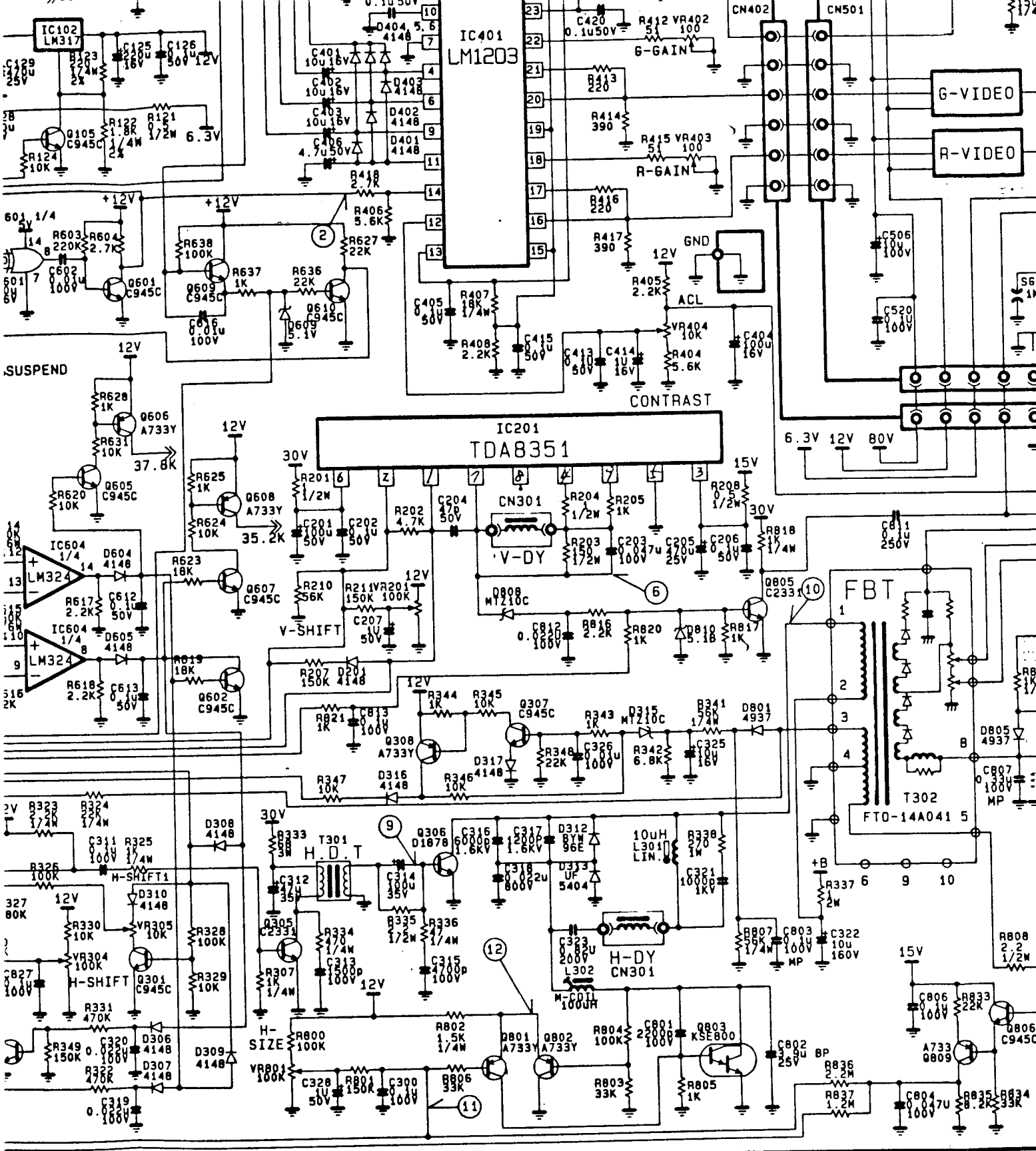
REV.	DATE	DESCRIPTION	DESIGNED	APPROVED
A	'94 04/20	INITIAL RELEASE	S.W.PARK	S.H.CHUNG



VOLTAGE & WAVEFORMS

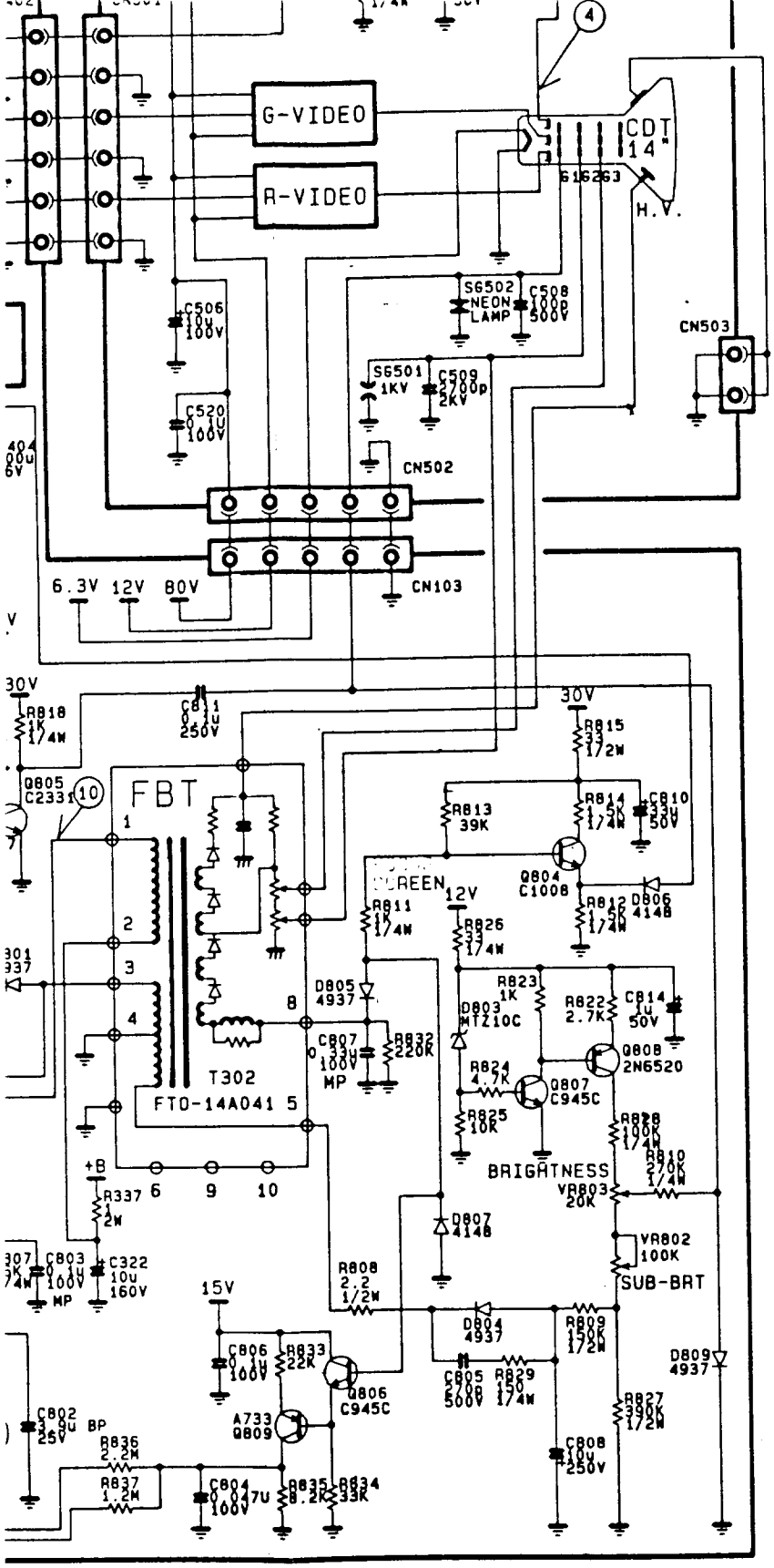



IC601=74LS86
IC603
TC4538BP
IC602
TC4538BP
IC301
TDA4850
LM324
SW TRANS
POWER_INPUT
LINEFILTER
SUSPEND
CHECK POINT
(35.2K)
V-SIZE
S-PIN
H-HOLD
H-SHIFT
37.8K
4.2V
★TF-041 ('92.5.1) REV.08

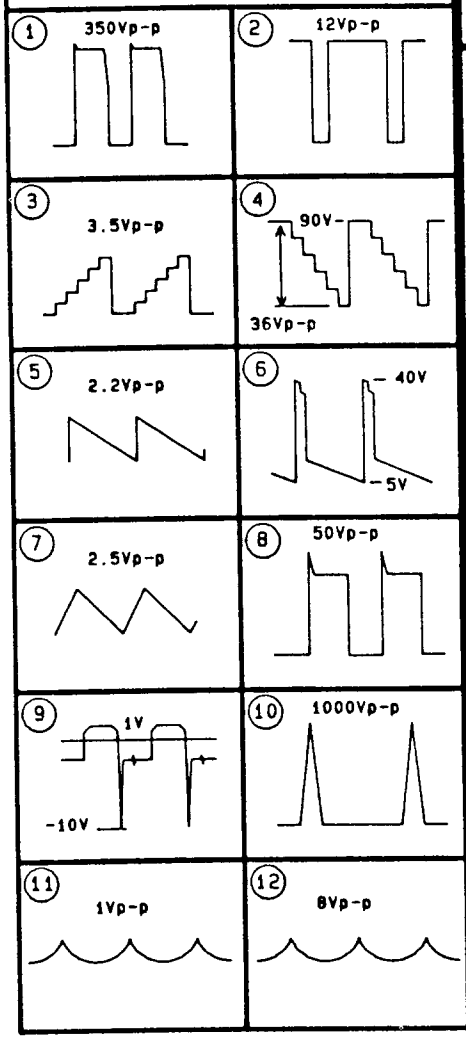


NOTE
1. RESISTER VALUES ARE ohm. K=1,000ohm M=1,000,000ohm.
2. ALL RESISTERS ARE 1/6W, UNLESS OTHERWISE INDICATED.
3. CAPACITOR VALUES ARE FARAD (F). u=1/1,000,000F p=1/1,000,
4. DIODE NAME : 4148=1N4148, 4937=1N4937

C D E F



VOLTAGE & WAVEFORMS



ohm. K=1,000ohm M=1,000,000ohm.
/6W, UNLESS OTHERWISE INDICATED.
IE FARAD(F). u=1/1,000,000F p=1/1,000,000u.
.N4148, 4937=1N4937

: PRIMARY REFERANCE
: SECONDARY GROUND

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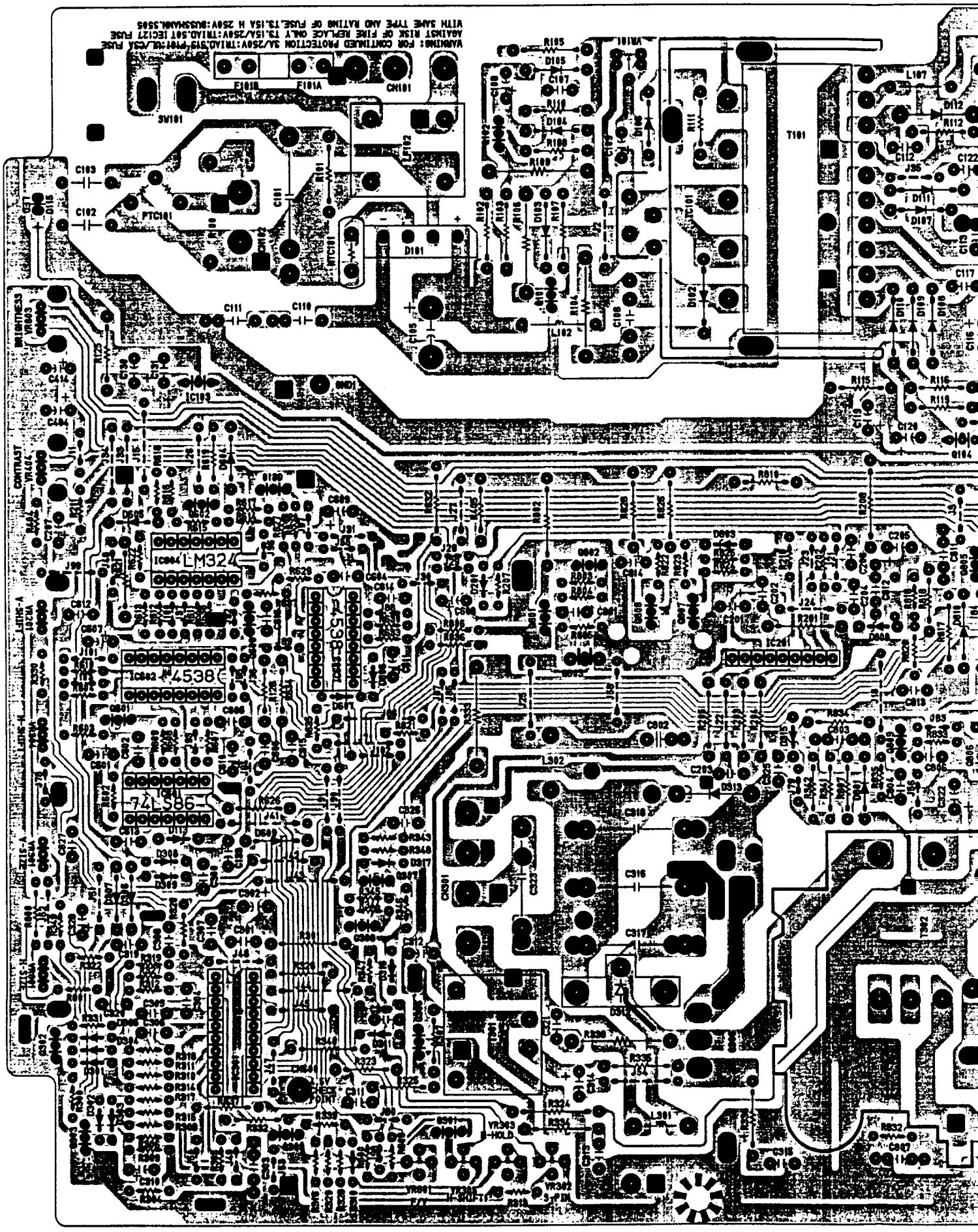
TITLE: SCHEMATIC & WAVEFORMS OF SC428VS+ET

APPROVALS	DATE	PCB NAME	REV.
DESIGNED KWANGSOO KIM		1 MAIN	A
DESIGNED GEUNWOO PARK		2 SOCKET	A
CHECKED JAY H. LEE		3	
APPROVED SOOHWA CHUNG		4	
DESIGN REVIEW		5	
CONSULTANT		6	

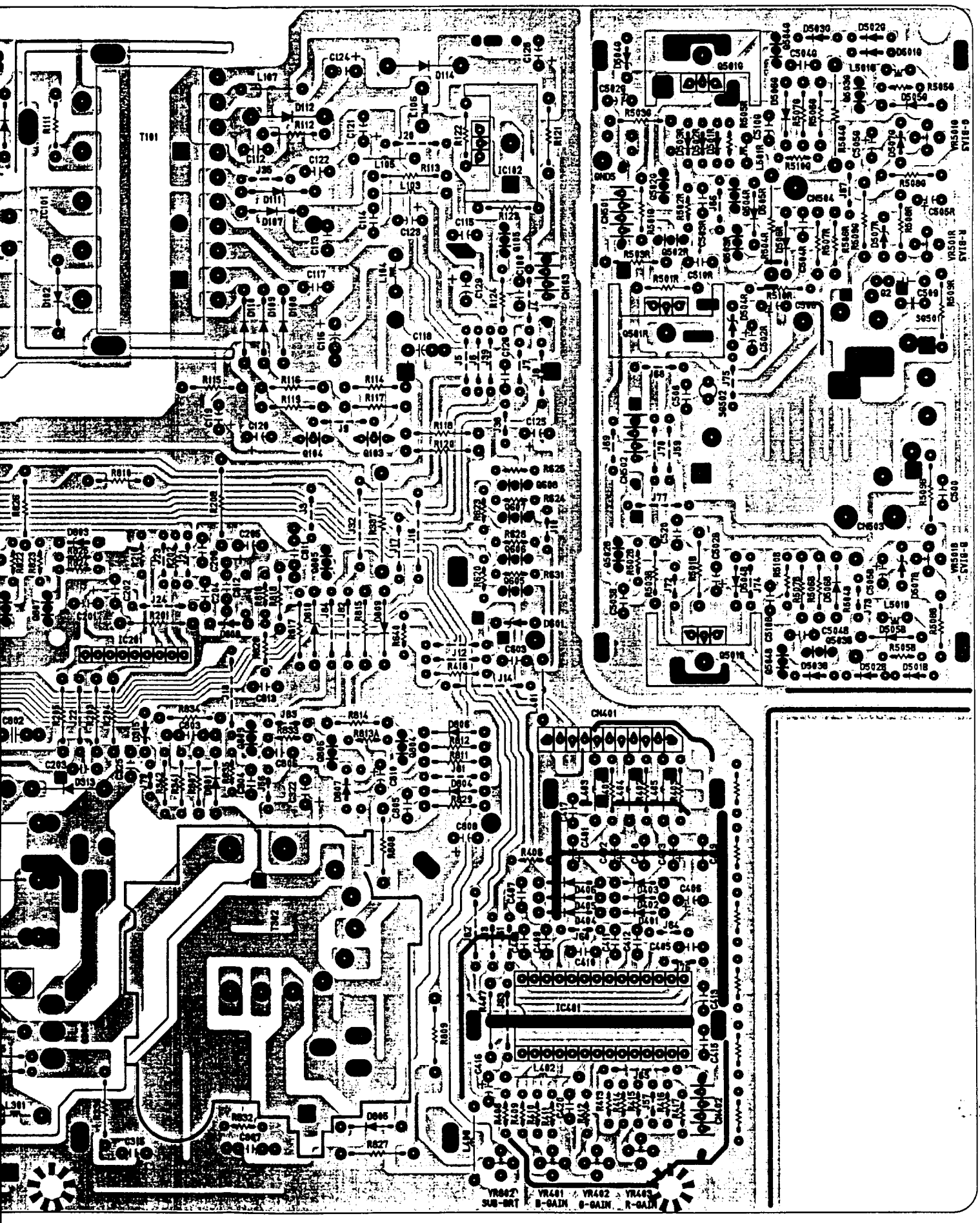
REF.		REV.: A	SIZE: A1
DWG.NO.	M6-178-XXXXX DC	SHEET: 1 OF 1	

[2] PCB ARTWORK DRAW/NGS



SOLDER SIDE MARKING/MASK/PATTERN
16-111-01598PS

, DOCUMENT NO : 13


T101
IC102
IC201
IC401
CN401
CN501
CN502
CN503
CN504
VR501R
VR501B
VR502
VR401
VR402
VR403
SUB-BRT
B-GAIN
G-GAIN
R-GAIN

8. APPENDIX

(1) PARTS LIST

SUB ASS'Y, CDT

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	0116101443	SUB ASS'Y, HEAT SINK	TOPAZ, KA317		
	0116101455	SUB ASS'Y, HEAT SINK	SC-428VS+, KSC3503D, ROBOT		
	0116101508	SUB ASS'Y, HEAT SINK	SC-428UX, STR58041		
	0116101535	SUB ASS'Y, HEAT SINK	471P/472P, TDA8351, MJE800		
	0116101559	SUB ASS'Y, HEAT SINK	471P/472P, D1878		
	0116101574	SUB ASS'Y, HEAT SINK	TOPAZ(N), RU4DS		
	0117400182	SUB ASS'Y, BACK CHASSIS	TOPAZ(N), AC SOCKET		
	0121100458	ASS'Y, CDT SC-428VSL+(ET)	M34KUK35*03(E)		
	0121100541	ASS'Y, CDT SC-439VS+(ET)	M34KRK55*04, 0.39		
	0121100589	ASS'Y, CDT SC-439VSL+(ET)	M34KUK55*03, 0.39D, 14", 380MG, VIMF		
	0121100817	ASS'Y, CDT SC-428VS+(ET)	M34KRH35*52, 0.28D, 14", ST, +380MG		
	MG17800805	PCB ASS'Y, SC-428VS+(ET)	FREE, ANALG, M. V. S		
	MG18300805	PCB ASS'Y, SC-428VSL+(ET) FREE, ANALG, M. V. S	FREE, ANALG, M. V. S		
	MG18700805	PCB ASS'Y, SC-439VS+(ET) FREE, ANALG, M. V. S	FREE, ANALG, M. V. S		
	MG18800805	PCB ASS'Y SC-439VSL+(ET)	FREE, ANALG, M. V. S		

MECHANICAL ASS'Y

CKT NO.	P/N	DESCRIPTION	SPEC	ECO NO	DATE
	0211100657	ASS'Y, HEAT SINK-N	471P/472P(3111400776, 3111900048)		
	0211100684	ASS'Y, BARK(FBT)	471P/472P(3121102197, 3111900051)		
	0211100696	ASS'Y, HEAT SINK(TRANS)	471P/472P(3111400701, 3111900051)		
	0211100749	ASS'Y, MAIN, CHASSIS, 470P 470AP	MAROON L.P		
	0212101586	ASS'Y, STAND-2, SC-428UX/L	OEM-3357(SAMTRON)		
	0212101598	ASS'Y, FRONT, SC-428VS+(ET)	OEM-3357		
	0212101603	ASS'Y, FRONT, SC-439VSL+(ET)	OEM-3357		
	0214102066	ASS'Y MANUAL USER'S, SC-428VS(E)/VSL+(E)	SDI		